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Both in KNOWLEDGE and PRACTICE;

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By J. HILL, M. D.

MEMBER OF THE IMPERIAL ACADEMY.



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M.DCC.LXXIII.

T O T H E

R I G H T H O N O U R A B L E

T h e E A R L o f B U T E.

M Y L O R D,

HE cannot fear the Censure of the World, who may address to your Lordship's most distinguished Name his Labours in a Science which has received so great Improvement from your own Regard; nor will Malice dare to throw out her ineffectual Poison against those Endeavours which have been honoured with your Approbation.

Botany, one of the most useful among the Sciences, and of all the most delightful, had lain through many Ages, restrained in narrow Limits, and buried under artless Methods. Of late the Additions exceed by many Times the original Stock: *America* has furnished us with a Number of Plants, larger than all the *Grecian* Studies knew; and the great *Swede* has made Advances towards Perfection in the Science, such as perhaps no Age has seen in any other.

What

DEDICATION.

What we have owed to your Lordship's Attention in adorning our Kingdom with these foreign Elegancies, all know who have heard the Name of modern Botany; but none can say how much the Science itself may stand indebted for farther Improvements to that free Patronage you are pleased to give to all who cultivate true Knowledge.

Perhaps it is not too much to hope, that under such Auspices the Subject will be pursued successfully, till not a Flower of the East or Western World shall be wanting in our Gardens; till the Science, traced in Nature only,

Paulatim vitia atque Errores exuit omnes :

and the Glory of having raised it to that Perfection, shall be given to *Britain*; and more immediately to your Lordship's Patronage and Example.

I have the Honour to be

with the highest Regard,

My Lord,

Your Lordship's

Most obedient,

and most humble Servant,

*St. James's Street,
Nov. 5. 1757.*

JOHN HILL.

P R E F A C E.

*T*HE Number of Works already extant on this Subject, has not deterred the Author from this Undertaking, because he sees the Imperfections and the Errors which abound in all. Some of those Pieces have been compiled by Persons who had neither Judgment nor practical Knowledge; others by such as were acquainted but with some one Part, and deficient in all the rest; and the very best of them (how often soever new dress'd and alter'd to the Time) are really antiquated, and deficient in the modern great Improvements. They have been received by the Public only because there were no better: for all who read them find their Defects; and perceive the Necessity of a more comprehensive and less erroneous Work.

Hitherto, those who have written on Gardening, have been uninformed of the Principles on which that Art should be founded: the Intent here is to explain the several Methods of bringing it, in each Branch, to Perfection; to unite the Science of Botany to the Arts of Culture: to apply Philosophy to Gardening; and make it raise those Scenes wherein it takes Delight.

We shall endeavour to inform the Gentleman and Mechanic together; to establish the one as the Head to plan and to conduct, and accomplish the other as the Hand to execute. To the Gentleman we shall explain the Structure and Particularities of the several Species of Flowers; the more usual, and those newly raised by the Industry of our Florists; as also of the curious Plants introduced from Asia and America within the last thirty Years. These are a vast Number; they compose the most valued Part of the Study at present; and they have yet been treated of by none in this Way; their very Names not being found in any Book on this Subject.

The working Gardener we shall, in the same Manner, instruct in his Province; and direct him plainly what he ought to do in every Article of his Profession. We shall shew how the worst Soil may be render'd fruitful, by proper Additions: and having thus prepared the Ground for yielding its Products, and taught him how to raise them, we shall lay down the Methods of disposing it into Form; and the most successful Way of planting it for Use and Beauty.

We shall comprehend the Compass of this Work nearly within the Circle of the Year; and so accommodate the Publication to the Season, that every Week shall direct what is that Week to be done.

Gardening is to be considered in a double Light; as it regards Products of Use, and those of Pleasure: these should be always perfectly distinguish'd; and they will be here treated in a separate Style. The Directions concerning the first, being such as the Gardener must understand, will be delivered in the most familiar Manner, and in the plainest Words:

every Article respecting the Management of the Kitchen and Fruit Ground shall be thus explained. On the other hand, as the Names of Flowers and curious Plants are the proper Knowledge of the Gentleman, they will be treated in the Manner of Science; and he will be taught to speak of them in proper Terms.

The general Method and Distribution of the Work for each Week, will be this: we shall arrange the whole that concerns the Culture of Plants, under four Heads, as it regards, 1. The Flower Garden, with its great Ornaments, the Greenhouse and Stove. 2. The Seminary or Nursery for its Supply. 3. The Fruit Garden; including the Wall, Espalier, and Orchard Trees. 4. The Kitchen Garden; comprehending under that Head the natural and artificial Methods.

This general Division will dispose the whole into four Sections; and under each of these, the Particulars will be deliver'd in separate Chapters; the one including an Account of the Products that are in Season; and the Care and Culture of the Ground.

Under the Section relating to the Flower Garden, the first Chapter will contain an Account of the Flowers and curious Plants that Week in their Perfection: not a bare List of them, as others have contented themselves to give; but a compleat History of each, with its Method of Culture.

The second will deliver the Care and Management of that Part of the Ground.

The Section relating to the Seminary will be dispatched in a single Chapter; for there the Culture is all, there being intended in that Part no Products of Perfection.

Under the third Section we shall give an Account of the Fruits that Week in Season, with their proper Names and Descriptions: from this every one will know what Kinds to expect, and by what Names to call those he sees: and after this will be delivered the Care and Management of Fruit Trees for that Season.

In the same Manner, under our last Section, will be given first a List of the Kitchen Garden Products then fit for Use, and afterwards the Management of the Ground.

In these Parts we shall not content ourselves to retail to the Reader what is to be found in other Writings, for they are of little Use in most Articles, from the late great Improvements; but shall add the present useful Knowledge.

The Study of Plants has undergone many Variations with respect to Method; and, at present, the System of LINNÆUS is universally followed.

No Book of Gardening has been written since this absolute Change in the Science; therefore all now extant are antiquated, and, in this principal Light, altogether useless. Those who understand Plants, now call them, universally and solely, by

the Names of this Author: and these Names not being found in any of the present Writings on the Subject: they are therefore defective on this important Head.

Some Method of Botany must be adopted in a Book of Gardening; and *TOURNEFORT*'s has been taken in the most popular Work of this Kind: but that Author's Method is now utterly rejected, and the Work, being dependent on it, is rendered so far obsolete. We shall, in this, follow the System of *LINNÆUS*, which we shall deliver compleatly, explaining his Terms. As the whole of the Science will be comprehended in the Work, we shall make it also familiar, plain, and easily intelligible: the unlearned shall, in this Book, understand the System of that celebrated Author.

To this End, as the new Method, tho' greatly esteemed, is supposed to be abstruse and difficult, we shall, in the first Numbers, explain it as Occasions arise, under the several successive Heads, in the most intelligible Words. This will give a general Idea of it, which we shall afterwards occasionally illustrate under the succeeding Articles.

In the Disposition of the Plants, we shall consider them as divided into so many Assortments as there are Weeks in the Year; and shall treat of them distinctly as they come into Flower; in the following Order. We shall give, 1. The general Character of each. 2. Its Names, vulgar, common, and proper. 3. Its Description; and under this Head, from the Character of the Flower, we shall shew its Class in the Linnæan System; and, 4. Its Culture.

The practical Part will be delivered as carefully, and in this all will be plain and easy: no Latin Names, nor Terms of Art will be there inserted: the meanest Labourer will understand it.

The general Subject will naturally fall under four Heads: 1. The Construction of a Garden. 2. The keeping it in Order. 3. The Products of Use; and, 4. The Products of Pleasure: and we shall be full, express, and practical on each. We shall shew how to make a good Garden in any Soil; how to dispose the Ground to the best Advantage in any Situation; how to manage it when made; and in what Manner to rejoice the Palate and the Eye with all its Products.

We shall, in the proper Parts, from Practice and Experience, add to the common Knowledge of the Gardener, the certain Methods of producing the finest Fruits in their best Perfection; and we shall deliver the hitherto unpublisch'd Secret of raising striped Leaves and double Flowers. Under this particular Head we are favour'd with some Communications from Holland and from France, which have been try'd and found successful; and may therefore be made public to Advantage.

To compleat the Article of Flowers, Shrubs, and curious Plants, we shall illustrate our Descriptions with Figures elegantly engrav'd: they will be drawn from Nature; and for those who chuse it, will be colour'd in the most elegant Manner.

'Tis disagreeable to descend to Particulars, with Respect to the Defects of other Writers; but since what has been here said, may be called idle Words, without farther Proof, we shall, as an universal

Example, produce one Instance, out of Thousands.

We will suppose a Gentleman charmed with the Fragrance of the single Rocket, and with the thick Spike of the double; and that he is desirous to understand what he so much admires: he will, for this Purpose, turn to the Book of most received Reputation, and look for Rocket; but he will look in vain: the Word is not in the Alphabet; and who ever thought of the Index of a Dictionary.

This is a common Flower; a Gardener's Book should not be without the Term in its proper Place: if the Plant were not treated under the English Name, that Word should have been inserted with a Reference to the proper Latin one: but this is not done.

We will suppose the Gentleman to pursue his Search, and look for Rocket in a common Dictionary, that he may find what is Latin for it, and then turn to it in the other. He finds the Word there, and sees for its Latin Name *Eruca*.

He looks for *Eruca* in his Gardener's Book; and he finds it; but he meets with no Information. He reads that there are six Kinds of Rocket; and that four of them are Plants of no Use or Beauty, and the two others Sallad Herbs.

This is all; and it is plain nothing he there reads relates to the Plants, concerning which he is desirous to be informed.

Rocket is indeed a wrong Name for that Herb; but should not a Writer in this Way, have, in its due Place, informed him so? though a false Name, it is an universal one: the Plant is commonly called by no other, and therefore will, by the Generality, be look'd for under no other.

We have shewn the Imperfection of the present Works, even the best of them, by this Instance: and we shall add what will be done in ours. We shall inform the Gardener and the Gentleman, that Rocket is the proper Term for a Sallad Herb, now out of Use.

That the same Word when used as the Name of a Flower, is applied to the Plant *Hesperis*; the proper English Name of which is *Dame's Violet*. Under either of which Names it will be found in our Book.

We shall acquaint him that this right Name *Hesperis*, was given to the single Kind, because of its great Sweetness toward Sun-set; that Word in Greek signifying the Evening.

We shall, in this Manner, ascertain the proper Names of all Plants raised in Gardens; and in this, and innumerable other such Instances, Things will be thrown into their right Course; the Gentleman will instruct his Gardener what to call Plants; not go to him for that Instruction.

When we have in this Instance shewn what the Herb vulgarly called Rocket, is, we shall direct the proper Place and Use of the single; and the Method of producing the double Kind. Delivering its Qualities and Use, illustrated with its Figure: and so of all other Garden Plants.

This which we have particularized in one, is the Method we shall follow in every Article. Shewing the Gardener and the Gentleman what the Herbs, Flowers and Fruits, proper for a Garden, are; and how to raise each to its full Perfection.

C O N -

C O N T E N T S.

- AUGUST. The last Week, p. 3 to 12.
1. Scarlet Canna, page 3.
 2. Fig-leav'd Hibiscus, 5.
 3. Great Larkspur, 6.
 4. African Geranium, 7.
 5. Oleander, 9.
 6. Codaga, Pala, 10.
 7. Great flower'd Jasmine, *ibid.*
- SEPTEMBER. The first Week, 13 to 24.
1. Common Capsicum, 13.
 2. Golden Capsicum, 14.
 3. Laurel-leav'd Passion flower, 15.
 4. Spotted Siftus, 16.
 5. Crimson Amaryllis, 17.
 6. Mutable Hibiscus, called the China Rose, 18.
 7. The Pomegranate, 19.
- SEPTEMBER. The second Week, 25 to 36.
1. Canary Dracocephalum, called Cedronella, 25.
 2. The Cotton Tree, 26.
 3. Egg Nightshade, called the Mad-apple, 27.
 4. Gloriosa, called the Superb Lilly, 28.
 5. Tuberous Bind-weed, called the Red-Battata, 30.
 6. Bixa, called Roucou and Orellana, 31.
- SEPTEMBER. The Middle, 37 to 48.
1. The true Acanthus, 37.
 2. Red Plumeria, 38.
 3. Pear fruited Solanum, 39.
 4. Yellow-fruited Momordica, 40.
 5. The Musk Hibiscus, 41.
 6. Golden Poinciana, 42.
- SEPTEMBER. The last Week, 49 to 60.
1. Ceylon Pancratium, 49.
 2. Purple Hæmanthus, 50.
 3. Azorian Jasmine, 52.
 4. Blue Clitoria, 53.
 5. Golden Cassia, 54.
 6. Scarlet Antholyza, 54.
- OCTOBER. The Beginning, 61 to 72.
1. Globular-flower'd Gomphrena, 61.
 2. Oval-leav'd Rose Hibiscus, 63.
 3. African golden Sage, 64.
 4. Ethiopian Shrub Tanzy, 65.
 5. Marvel of Peru, 67.
 6. Yellow Phlomis, 68.
- OCTOBER. The Middle, 73 to 84.
1. Ethiopian Marygold, 73.
 2. Blue umbellated Crinum, 75.
 3. Ever green Purslain, 76.
 4. Sweet Calla, 76.
 5. Silvery Protea, 78.
 6. Purple Geranium, with auriculated Leaves, 79.
- OCTOBER. The third Week, 85 to 96.
1. Golden Fox-glove, 85.
 2. White Ceylon Plumbago, 86.
 3. Velvet Bind-weed, 87.
 4. Trifoliate Erythrina, 88.
 5. Crimson Pentapetes, 89.
 6. Scarlet Lantana, 90.
- OCTOBER. The latter End, 97 to 108.
1. Violet colour'd African Campanula, 97.
 2. Purple Socotrine Aloe, 98.
 3. Ethiopian Phillyca, 100.
 4. Occidental Grewia, 101.
 5. Vine-leav'd Geranium, 102.
 6. Purple Shrub Trefoil, 103.
- NOVEMBER. The first Week, 109 to 120.
1. White Shrub Aster, 109.
 2. Caribbean sweet Pancratium, 111.
 3. Herbaceous Tetragonia, 112.
 4. Spotted African Hebenstretia, 113.
 5. The Screw Tree, 114.
 6. Sampire-leav'd Tanzy, 115.
- NOVEMBER. The second Week, 121 to 132.
1. Short thick-leav'd Aloe, 121.
 2. Long fruited Trichosanthes, 123.
 3. Great Snap-Dragon, 124.
 4. American Euonymus, 125.
 5. Striped Amaryllis, 126.
 6. The Vitex, 127.
- NOVEMBER. The Middle, 133 to 144.
1. Three rib'd Ceanothus, 133.
 2. Corymbous great Selago, 134.
 3. Yellow Indian Sida, 135.
 4. Canary Bell-Flower, 136.
 5. Yellow cluster flowered Aloes, 137.
 6. Crimson Papilionaceous flowered Geranium, 138.
- NOVEMBER. The latter End, 145 to 156.
1. Long-leav'd Philanthus, 145.
 2. Violet flower'd Ethiopian Roella, 146.
 3. Rivina, 147.
 4. Candy Chrysanthemum, 149.
 5. Narrow-leav'd Ethiopian Calendula, 150.
 6. Purple African Shrub Mallow, 152.
- NOVEMBER. The last Week, 157 to 168.
1. The Polyanthous Primrose, 157.
 2. French Marygold, 159.
 3. African Marygold, 160.
 4. Indian Nasturtium, 162.
 5. Great oriental Perficaria, 163.
 6. Shrubby Polygala, 164.
- DECEMBER. The first Week, 169 to 180.
1. Violet Mimulus, 169.
 2. Broad-leav'd Pancratium, 170.
 3. Common Arbutus, 172.
 4. Purple Saracena, 173.
 5. Variegated Asclepias, 175.
 6. Aloe with spotted Tongue like Leaves, 176.
- DECEMBER. The second Week, 181 to 192.
1. Persian Cyclamen, 181.
 2. Guernsey Lilly, 182.
 3. Fringed Narcissus, 184.
 4. Liria, 184.
 5. Stellate Nyctanthes, 185.
 6. Double Indian Nyctanthes, 187.
 7. Prickly spotted leav'd Aloe, 187.
- DECEMBER. The third Week, 193 to 204.
1. Proliferous Mountain Crowfoot, 193.
 2. Spiral Vallisneria, 195.
 3. Pectinate leav'd Othonna, 196.
 4. Scarlet Cynomorium, 197.
 5. Mamillary Cactus, 199.
 6. Sea Pancratium, 200.
- JANUARY. The first Week, 205 to 216.
1. The Snow Drop, 205.
 2. Jacobæan Amaryllis, 206.
 3. Winter Wolfs-bane, 208.
 4. Double Colchicum, 209.
 5. Variegated Colchicum, 210.
 6. Proliferous Daisy, 211.
 7. Blue starry Hyacinth, 213.
- JANUARY. The second Week, 217 to 228.
1. Heart-leav'd Borbonia, 217.
 2. Purple starry Senecio, 219.
 3. Long-leav'd Othonna, 220.
 4. Canary Shrub St. John's Wort, *ibid.*
 5. Woolly Hermannia, 222.
 6. Sampire-leav'd Santolina, *ibid.*
- JANUARY. The Middle, 229 to 240.
1. Hura, 229.
 2. Pine Apple, 231.
 3. Golden Arctotis, 234.
 4. Alated Verbefina, 235.
 5. Canary Broom, 236.
 6. Rigid Shrub Senecio, *ibid.*
- JANUARY. The latter End, 241 to 252.
1. Radiated annual Senecio, 241.
 2. Crimson Crassulæ, 242.
 3. Round-leav'd Cyclamen, 243.
 4. Evergreen Melia, 244.
 5. Warted Coral Aloe, 246.
 6. Orhioide Hyacinth, *ibid.*
- FEBRUARY. The first Week, 253 to 264.
1. Apennine Adonis, 253.
 2. Judas Tree, 255.
 3. Polyanthous Crocus, 256.
 4. Great flower'd Pulsatilla, 258.
 5. The Garden Cornell, 260.
 6. Tree Houfteleck, 261.
- FEBRUARY. The second Week, 265 to 276.
1. Great flower'd Snow Drop, 265.
 2. Many flower'd Snow Drop, 266.
 3. Giant Asclepias, 267.
 4. Amethyfine Hyacinth, 268.
 5. Single and double golden Crocus, 269.
 6. Double blue Hepatica, 270.
- FEBRUARY. The third Week, 277 to 288.
1. Tree Mint, 277.
 2. White American Purslain, 278.
 3. Multifid leav'd African Senecio, 279.
 4. Crimson Oxalis, 280.
 5. Creeping Othonna, 281.
 6. Many-leav'd American-Cassia, 283.
- FEBRUARY. The latter End, 289 to 300.
1. Diamond Mesembryanthemum, 289.
 2. Proliferous Datura, 291.
 3. Nepenthes, 292.
 4. African Drosera, 294.
 5. Pearl Aloe, 295.
 6. Thorny sensitive Plant, *ibid.*
- FEBRUARY; latter End, and Beginning of MARCH, 301 to 312.
1. Double Violet, 301.
 2. Great Purple Anemone, 303.
 3. Golden Narcissus, 304.
 4. Ladies Slipper, 305.
 5. White purple edged Tulip, 308.
 6. Psidium, 309.
- MARCH. The second Week, 313 to 324.
1. Broad-leav'd, pendulous flower'd Cytisus, 313.
 2. Italian Philadelphus, 314.
 3. Double Ladysmock, 315.
 4. Broad-leav'd Pulmonaria, 317.
 5. Long-spiked Cytisus, 318.
 6. Dwarf oriental Piony, *ibid.*
- MARCH. The Middle, 325 to 336.
1. Double blossom'd Cherry, 325.
 2. Peruvian Hyacinth, 327.
 3. Gold-cup'd Narcissus, 329.
 4. Double Jonquill, 330.
 5. Double Primrose, 331.
 6. Great Orange Daffodil, 332.
- MARCH. The latter End, 337 to 348.
1. Violet Self-heal, 337.
 2. Blue Pyrenæan Aster, 338.
 3. Early Shrub Anonis, 339.
 4. Spiked Dracocephalum, 340.
 5. Tutian-leav'd Apocynum, 342.
 6. Indian Heliotrope, 343.
- APRIL. The first Week, 349 to 360.
1. Proliferous Oxlip, 349.
 2. Great double Cowslip, 351.
 3. Great Violet Crocus, 352.
 4. Austrian Dwarf Iris, 353.
 5. Double Lemon Daffodil, 354.
 6. Purple Auricula, 356.
- APRIL. The Middle, 361 to 372.
1. The embroidered Tulip, 361.
 2. Crimson Daphne, called Mezereon, 363.
 3. Yellow painted Iris, 364.
 4. Dusky Fritillary, 365.
 5. Black Hellebore, 366.
 6. Crimson Erythronium, 368.
- APRIL. The End, 373 to 384.
1. The Persian Iris, 373.
 2. Trifoliate Arum, 375.
 3. Dotted Acadian Lilly, 376.
 4. Quadrifoliate Bignonia, 377.
 5. Ever-flowering Iberis, 378.
 6. Blue cluster flower'd Aster, 379.
- MAY. The first Week, 385 to 396.
1. Blood-red Anemone, 385.
 2. Low Star of Bethlehem, 386.
 3. Double crimson Anemone, 387.
 4. Painted Amethyfine Tulip, 389.
 5. Yellow Asphodell, *ibid.*
 6. Golden proliferous Crowfoot, 391.
 7. Blue oriental Hyacinth, 392.
- MAY. The second Week, 397 to 408.
1. The changeable Tulip, 398.
 2. — golden Tulip, *ibid.*
 3. — bleeding Tulip, *ibid.*
 4. — pearl and crimson Tulip, *ibid.*
 5. — Auriflame, or gold and scarlet Tulip, 399.
 6. — white and purple Tulip, *ibid.*
- MAY. The Middle, 409 to 420.
1. Common purple Fritillary, 429.
 2. Purple Pyrenæan Fritillary, 410.
 3. Isabella Fritillary, 411.
 4. Great umbelliferous Fritillary, *ibid.*
 5. Small umbelliferous Fritillary, *ibid.*
 6. Yellow Italian Fritillary, 412.
 7. Green Fritillary, *ibid.*
 8. Snowy Fritillary, *ibid.*
 9. Double Fritillary, 413.

- MAY. The latter End, 421 to 432.
 1. The Cluster Tulip, 421.
 2. Zumbul Hyacinth, 422.
 3. Golden Amaryllis, 423.
 4. The Persian Lilly, 424.
 5. Proliferous scarlet Anemone, 425.
 6. Broad-leav'd cluster Fritillary, 428.
 MAY, the End, and Beginning of JUNE, 433 to 444.
 1. Double Peach-bloom Anemone, 433.
 2. The Guelder Rose, 435.
 3. Great Doronicum, 436.
 4. Double oriental Narcissus, 438.
 5. ——— scarlet Lilly, 439.
 6. ——— Wood Anemone, 440.
 JUNE. The Beginning, 445 to 456.
 1. European Trollius, 445.
 2. The flaming Tulip, 446.
 3. The pearl and purple Tulip, 447.
 4. Yellow Molly, *ibid*.
 5. Alternate flower'd Gladiolus, 449.
 6. Great crimson Piony, 451.
 7. Flethy late Fritillary, 452.
 JUNE. The Middle, 457 to 468.
 1. Imperial Martagon, 457.
 2. Double starry Columbine, 459.
 3. Violet bulbous Iris, 460.
 4. Hungarian Iris, 462.
 5. Yellow and white Jonquill, 463.
 6. Great white Narcissus, 464.
 JUNE. The third Week, 469 to 480.
 1. The late double Tulip, 469.
 2. Oriental Meadow Crowfoot, 470.
 3. Humble Polemonium, 472.
 4. Double white Crowfoot, 473.
 5. Sanguinaria, 474.
 6. Deadly Nightshade, 475.
 JUNE. The last Week, 481 to 492.
 1. The Nonpareil Daffodil, 481.
 2. Hairy Curasso Parslain, 482.
 3. Amethystine Muscari, 483.
 4. Ethiopian Adonis, 484.
 5. Grey starry Hyacinth, *ibid*.
 6. Broad-leav'd Portugal Iris, 485.
 JULY. The first Week, 493 to 504.
 1. Rosebay Willow Herb, 493.
 2. Poetic Daffodil, 495.
 3. The two-staged Martagon, 497.
 4. Inverted Columbine, *ibid*.
 5. Oriental Gladiolus, 498.
 6. Striped bulbous Iris, 499.
 JULY. The second Week, 505 to 516.
 1. The Blood-spotted Carnation, 505.
 2. The great crimson Carnation, 506.
 3. Great Tobacco, 507.
 4. Double Rose Campion, 508.
 5. Common Garden Pink, 510.
 6. Majestick Crown Imperial, 511.
 7. Great Chalcedonian Anemone, 512.
 JULY. The Middle, 517 to 528.
 1. Silver and Gold Daffodil, 517.
 2. Sufian Iris, 518.
 3. Single golden Amaryllis, 519.
 4. Double golden Amaryllis, 520.
 5. Crimson oriental Amaryllis, 521.
 6. Peach bloom Iris, 522.
 JULY. The latter End, 529 to 540.
 1. The double red Rose, 531.
 2. Great annual Helianthus, 531.
 3. ——— Flake Carnation, 532.
 4. ——— Bizarre Carnation, 533.
 5. Double violet Poppy, 534.
 6. Feather'd Poppy, 535.
 7. The double Musk Rose, 536.
 8. The hundred leaved Rose, *ibid*.
 AUGUST. The first Week, 541 to 552.
 1. Great white Asphodel, 541.
 2. Prænestine Rose, 542.
 3. Scarlet Chalcedonian Lilly, 543.
 4. The double blossom'd Bramble, 545.
 5. Mandrake, 545.
 6. Spanish bulbous Iris, 547.
 AUGUST. The second Week, 553 to 564.
 1. Oval-leav'd Crematis, 553.
 2. Alopecuroide Astragalus, 554.
 3. Oriental Betony, 555.
 4. Lacinated Rudbeckia, 556.
 5. Siberian Larkspur, 557.
 6. Many spiked Veronica, 558.
 AUGUST. The third Week, 565 to 576.
 1. Yellow Hemerocallis, 567.
 2. Great red Cheiranthus, *ibid*.
 3. Orange Hawkweed, 569.
 4. The Bee Flower, 570.
 5. Dotted Canna, 573.
 6. Crimson Bizantine Lilly, *ibid*.
 AUGUST. The last Week, 577 to 588.
 1. Golden perennial Mothmullio, 577.
 2. Double Trachelium, 578.
 3. Nettle leav'd Siberian Phlomis, 579.
 4. Various flower'd Coronilla, 581.
 5. Purple center'd Rudbeckia, 582.
 6. Flat leav'd golden Sedum, 583.
 SEPTEMBER. The first Week, 589 to 600.
 1. Ciliate leav'd Rhododendron, 591.
 2. The Storax Tree, 592.
 3. The Hop Horn-beam, 593.
 4. Ternate leav'd Rue, 594.
 5. Purple Tragacanth, 595.
 6. Lemon Saxifrage, 596.
 SEPTEMBER. The Beginning, 601 to 612.
 1. Beureria, 601.
 2. Thuringian Lavatera, 603.
 3. The striped Lilly, 604.
 4. Yellow Pyrenean Aconite, 605.
 5. Lanceolate Broom, 607.
 6. Scarlet Monarda, *ibid*.
 SEPTEMBER. The second Week, 613 to 624.
 1. Drooping Shrub Xeranthemum, 613.
 2. Yellow African Shrub Trefoil, 614.
 3. Golden Cudweed, 615.
 4. Narrow leav'd Hebenitretia, 616.
 5. Yellow occidental Cassia, 617.
 6. Three forked Santolina, 618.
 SEPTEMBER. The latter Part, 625 to 636.
 1. Indian Exacum, 625.
 2. Three colour'd Protea, 626.
 3. Crimson Ixora, 627.
 4. Mitchella, 629.
 5. Shrubby Jusfia, *ibid*.
 6. Trifid leav'd Leucadendros, 630.
 7. Callicarpa, 631.
 8. Avicennia, 632.
 SEPTEMBER. The last Week, 637 to 648.
 1. Late bulbiferous Lilly, 637.
 2. Scarlet Muntingia, 639.
 3. Narrow leav'd Othonna, 640.
 4. Oval leav'd Cordia, *ibid*.
 5. Late Pomponian Martagon, 641.
 6. Broad leav'd Star Hyacinth, 642.
 OCTOBER. The first Week, 649 to 660.
 1. Double China Aster, 649.
 2. Double crimson Hollyhock, 652.
 3. Spotted Phlox, 654.
 4. Single violet Stock Julyflower, 656.
 5. Double variegated Stock Julyflower, *ibid*.
 6. Trilobate Lavatera, 657.
 7. Giant Lupine, 658.
 OCTOBER. The second Week, 661 to 672.
 1. Ever-green Centaurea, 661.
 2. Broad leav'd Scabious, 662.
 3. Purple tanzy leav'd Achillæa, 663.
 4. Variegated rough Silene, 664.
 5. Yellow oriental Cornflower, 665.
 6. Golden Cotyledon, 666.
 OCTOBER. The Middle, 673 to 684.
 1. Allobrogian Hemerocallis, 673.
 2. Double red Campion, 674.
 3. Arabian Ornithogalum, 675.
 4. Illyrian Pancratium, 677.
 5. Dark flowered white Hellebore, 678.
 6. Green back'd Ornithogalum, 679.
 OCTOBER. The latter End, 685 to 696.
 1. Dwarf ever-green Phaeolus, 685.
 2. Green flower'd Squill, 686.
 3. Willow leav'd Shrub Aesclepias, 687.
 4. Corymbous lobated Spiræa, 688.
 5. Purple Ethiopian Amaryllis, 689.
 6. Prickly Osteospermum, 690.
 OCTOBER. The latter End, 697 to 708.
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 2. Crimson Periwinkle, 698.
 3. Jacobæan Lotus, 699.
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 6. Ferrugineous Foxglove, *ibid*.
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E D E N:

A

COMPLEAT BODY

O F

G A R D E N I N G,

In KNOWLEDGE and PRACTICE.

No. I. For the latter End of AUGUST.

INTRODUCTION.

Of the proposed Method of the Work. And of the general Distribution of a Garden.

August. **I**T is the Purpose here to treat of Gardens, from their original Plan and first Construction, to the raising them to Perfection, and keeping them in that Condition; and we shall consider, in our Course, their Products, whether of Use, Curiosity, or Beauty.

All these we shall describe in their several Seasons; suiting our Publications to the Time of their Appearance: reserving to those Parts of the Year in which there are fewest of these Objects to delight the Eye, those Things which are the Employment of the Imagination.

In the Winter Months we shall deliver Rules for planning and laying out the Ground; for the Construction of the Whole, and for the Distribution of its particular Parts. In the present Part our Purpose will be to inform the Possessor of a Garden, whether of larger or less Extent, how he may best enjoy the Autumn, and prepare for the succeeding Spring.

We shall place ourselves at the autumnal Period, that the Reader's Eye may occasionally recur from the Garden in its fullest State to the Book, and again from that to the Garden; confirming and illustrating one by the other; and shall introduce the Reader at once into his Ground, as it appears at that rich Season, when it glows with the last Flowers and Fruits of Summer, and promising those of Autumn.

We understand the Garden of which he is possessed, or of which he now comes into Possession.

Numb. I.

to be stocked with the common Things, August. and to have been hitherto kept in the usual Manner, as every Gardener has been taught, from Father to Son, mechanically to manage it; and as every common Writer has copied his Directions from the last that went before him.

In this Condition he finds it, and we propose to inform him how he may improve it: In the succeeding Sheets we shall deliver the Methods of doing this in the Disposition of its Parts; and in the present by the Introduction of new Plants, by raising new Varieties of striped, of painted, and of double Flowers; and by a more rational and more successful Care of those he has already.

Method and regular Distribution are the familiar Paths to Knowledge; and they are nowhere more necessary than in the Consideration of a Garden.

Under the general Name of its Products are comprehended Objects of various Kinds, some of Use, and others raised solely for Pleasure; some, as the common Flowers, for the Amusement of the Eye, others, as the exotick Plants, for the Encrease of Knowledge.

These last are the nobler Part of the Study, and they are what the greatest Persons who are pleased to honour the Science with their Notice, most observe. These were the Regard of a RICHMOND (never to be named without Respect and Tears) and they are now the Care of an ARGYL: in these a PETRE once delighted, and a BUTE at present.

B

These

August. These we shall explain, not as that is attempted in the most popular Work of this Kind, in the antiquated Terms of *TOURNEFORT*, but according to the System of *LINNAEUS*, now solely followed; and to the Numbers already introduced, incite the Curiosity and Taste of these the Patrons of the Science to add others which are worthy; Natives of the remotest Climates, which have flourished in the Gardens of *HOLLAND* and of *FRANCE*, and which may give a new Lustre to ours.

We have thus delivered the intended Method of our Work, and may now advance into the Garden: as its Products are so distinct, and its Purposes in different Parts so various, we hope it is found by the Possessor already divided into several Partitions according to the Designs of *PLEASURE*, of *USE*, of *CONVENIENCE*, and of *CURIOSITY*: if otherwise it must be his Care in the succeeding Months to give it this Distribution.

Let him remember that he is to raise in it Plants of uncommon Kinds, and Flowers of Elegance, for the Contemplation of the Eye and of the Mind; and Products of Use for the Gratification of the Appetite. These, from their various Natures, require a different Care and Culture; and in the Eye of Reason a different Place: as they are separate in Nature, let them be kept distinct upon the Ground. We shall deliver the best Methods of managing all the Kinds; and the several Species of Culture suited to their different Stages.

As the Improvement of Botanic Knowledge is the noblest Article of the Gardener's Province, we shall begin with that Part of the Study; explaining the several Plants according to the just Form of Science; and illustrating them with Figures. After these we shall come in course to the full and practical Consideration of the several other Articles.

Upon this general Distinction into Products of *CURIOSITY* and those of *USE*, depends the first Article in the Distribution of a Garden. These are to be kept separate; and they naturally throw the whole into two great Divisions: but under each Head there also rise other subordinate Causes of Distinction.

Of the Plants which laudable Curiosity, and a Thirst of Knowledge have brought to us from other Regions, some will endure our Seasons throughout the Year; others can only be exposed to the open Air during the warmer Months; and many are too tender to bear its full Force at any Time.

These the judicious Gardener is to manage according to their various Natures; and hence arise the Distinctions of the *OPEN GROUND*, the *GREENHOUSE*, and the *STOVE*.

This is a Distribution so needful, that the very Being of the Plants depends upon it.

Some of the hardy Kinds may be, and some must be raised where they are to remain; but

the greater Part will bear to be transplanted, August. and some thrive for it the better.

These should be raised in another Place, and only brought into the Borders at a proper Time before their flowering.

This Consideration gives Origin to what is called the Seminary or Nursery, a distinct Part in the Distribution of the Ground: in this they are to be produced from Seeds or otherwise, and preserved till toward the Time of their arriving at their Perfection.

The Products of the Kitchen Garden require in the same Manner their different Degrees of Heat, and also their several Transplantations: but as Frames and Glasses here supply the Place of Greenhouses and Stoves, and Use not Elegance is the Design of this Part, one Quarter removed from the rest, and properly conceal'd, will answer this Purpose; and there will need no farther Regard to this Matter in the Article of Distribution.

The Herbage of a Garden being thus disposed, we come to the Consideration of its Fruits. These are raised principally against Walls, or in Espaliers, and therefore rather belong to the natural Divisions of a Garden, than require a particular Assortment under that Article: but as there are some which are the proper Product of a separate Quarter, we shall consider these as the Portion of a peculiar Piece of Ground under the Name of an *ORCHARD*.

From this we shall be led to such other Trees, as from their Beauty deserve a Place in the Garden, but from their vast Growth cannot be contained there, and therefore are to have a separate Place under the Name of the *WILDERNESS*.

This is the proper and perfect Distribution of a Garden; and these its natural and necessary distinct Compartments.

If our Reader finds himself in Possession of one thus divided into *FLOWER* and *KITCHEN GROUND*, defended by *WALLS* and planted with *ESPALIERS*, furnished with its *GREENHOUSE* and its *STOVE*, and enlarged by the Addition of its *SEMINARY*, *ORCHARD*, and *WILDERNESS*, he will have no more Care upon his Mind than to observe our separate Instructions with Respect to the Management of each: but if he find it wanting in any of these Respects, and intend to make it complete, he is to wait the proper Season, and he will here find Directions for that Purpose.

According to the distinct Parts of a Garden which we have here laid down, the Possessor of the Ground will find its Products arranged under four Heads; the first comprehending the curious Plants and Flowers; the second useful Herbage; the third Fruits; and the fourth Forest-Trees; these we shall consider in their proper Order; pointing out the principal Kinds he is each Week to expect in their Perfection; and explaining each Article according to the Dictates of Experience and the Laws of Science.

August.

SECTION I.

August.

FLORA; or the Pleasure Garden.

This being a Time in which little is needful to be done in the Kitchen Ground, we shall devote the greater Part of the present Number to the Flower Garden: and in the same Manner we shall reduce that Article in some of the succeeding Numbers to give full Directions for the others.

ENTERING in this Place, on the Consideration of curious Plants, we begin in the greatest and most perfect Part of the Study. It has been called the most difficult: but the Purpose of this Work is to render it easy.

A Knowledge of Botany is what every one, conversant at all in these Things, is desirous to attain; and we shall here point out the certain Path; introducing the Student at his first Step into the Road of Science; and leading him by the Hand through all its Meanders and supposed Perplexities.

There is but one System now received in the World: this is that of the celebrated LINNÆUS. Not only the Distinctions and Terms of the Science are taken from him, but the very Names of Plants: Many of our late Acquisitions having been new named by him, and some of the most curious by no other Author. This is the Path all, at the present Time, pursue in the Study, and this has not been named or introduced in any Work of Gardening hitherto published. It has been invented since the Writing

of most Books on this Subject, and (with Modesty be it spoken by the Authors of this) it is above the Reach of those who have written the others. A Knowledge of the GREEK Language is needful to understand the very Meaning of the Words, for they are all derived from it; and to comprehend the Characters annexed to them requires a Search into Nature's Bosom, which few such have Application or Capacity to perform.

Let it not seem too assuming, that we propose here to explain this abstruse System. The GREEK, though no Gardener's Tongue, is not an unknown Language; nor are the Depths of Nature unfathomable. The Want of a Work on Gardening, in which this Method should be explained, was the principal Occasion of the present Undertaking; and we propose in it to make this SWEDISH speak ENGLISH, and to deliver his Method in such a Manner, that all may comprehend it; and the most slight Student smile at those, who, when they allow its Use, lament its Difficulty.

CHAPTER I.

FLOWERS and curious PLANTS now in their Perfection.

THE succeeding Numbers of this Work will have the same Division with the present: In each we shall treat of the Flowers and curious Plants which are in their full Beauty at the Time of its Publication: one Number cannot contain all of them, because the whole would be then employed on that Head alone, and the other Sections over-looked or slighted; but the principal shall have Preference each Week; those which are most conspicuous and most worthy of their Place, and those it would be an Honour to the judicious Gardener to introduce. Of others we shall speak hereafter.

As we shall not instance in this Place all the Genera, neither shall we enumerate all the Species under each: but to keep up the due Proportion in the several Parts of our Work, we shall select a proper Number out of those which offer; and under every Article chuse such as will best serve the Purposes of Knowledge and of Practice to the Reader: we shall fix our Choice on those particular Plants, which will be most proper to illustrate the System of LINNÆUS to the Gentleman; and most serviceable to explain their Culture to the practical Gardener.

I. SCARLET CANNA.

This is a Plant of great Singularity, and is not without its Beauty. The Vulgar call it FLOWERING REED, and INDIAN REED; the common Writers, CANNACORUS VULGARIS, and ARUNDO FLORIDA. Its proper Name is *Canna foliis ovatis utrinque acuminatis nervosis*. *Canna* with oval Leaves, small at each End, and nervous.

Its Root is tuberous, thick, and irregular; the Stalk is round and jointed; the Leaves are large and broad; they are small at the Base, sharp-pointed, deeply rib'd, and of a pale green. They are very numerous, and

at their first Appearance are twisted up like Horns. The Plant is a Yard high.

The Flowers are long and slender, and they stand with their Cups upon the Rudiment of the Fruit. Ten or a Dozen of them appear at once upon the Top of the Stalk; and their Colour is a bright and beautiful Scarlet.

Each is compos'd of a single Petal, divided into six long slender Parts, one of which turns down. Its Bottom is surrounded by a Cup form'd of three little Leaves; and in its Centre there is a single Filament, at the Top of which

Plate I.
Fig. 1.

August. which is fix'd a slender Button.

Beneath the Cup is plac'd the Rudiment of the Seed-vessel or Fruit: this while the Flower continues is roundish and rough, but small. After that is fallen, it grows larger; the Cup remains upon it in a kind of Crown; and the Seeds contain'd in it are roundish and hard.

This Plant belongs to the first Class, in the Method of LINNÆUS, the Title of which is MONANDRIA. This we shall here explain.

The System of that Author is founded upon the internal Parts of the Flowers of Plants; and his Classes are established upon the Number and Disposition of those Filaments or Threads, which are their principal Part.

To understand this perfectly, let the Reader lay before him a common Flower of almost any Kind: he will find these separate and distinct Parts: 1. The Cup: 2. The Body of the Flower consisting of one or more Leaves, call'd Petals; and, 3. One or more Filaments or Threads, crown'd with Buttons, call'd Antheræ.

There are particular Plants, whose Flower wants one or other of the first nam'd Parts; and some in which the Antheræ have no Filaments to support them; but these are particular Instances, and will be explain'd in their Place: What we have here nam'd, is the general Structure of a Flower.

In order to understand the System of LINNÆUS, the Threads or Filaments, with their Buttons, or Antheræ, are to be counted and examined; for according to their Number first, and afterwards to their Disposition, he has arrang'd the Plants under his distinct Classes. Let us refer this to the present Instance. On examining the internal Part of the CANNACORUS Flower, we find one Filament with its Button. The first Class of LINNÆUS comprehends those Plants which have Flowers with a single Filament: Therefore this is one of this Class.

The Term by which he expresses it MONANDRIA, is form'd of two Greek Words: the Sense of which is, Plants in whose Flower there is only one Male Part: the Nature and Office of the Filament or Stamen, with its Button, is denoted by that Expression.

Thus the Reader understands what is meant by the first Class of LINNÆUS, and has made a fair Step into the System of Botany established by that Author. Whatever other Plant he observes to have only one Filament, or Button, in the Flower, he will be able to say belongs to the MONANDRIA.

We shall as familiarly lead him to the Characters of the other Classes: and when he knows as much of them, as he already does of this, he will have master'd the first great Article of this famous System.

Now the Character of the first Class is understood, the Source of that Author's subordinate Distinction into Sections, is to be explain'd; and this will be found as easy as the former, from what will be seen in the same common Flower, we have desired should be examined.

Within or among the Threads, in its Centre, there will be perceiv'd a Part or Parts different

from them in Form, and destitute of that Anthera or Button which is fixed to their Top.

This Part is sometimes single; sometimes there are several. These are called the Style or Styles of the Flower: and they are sometimes simple, all the Way sometimes split or divided.

As the Class is established upon the Number of Threads or Filaments, the Section is determined by that of the Styles or their Division: as the Nature of the Filaments is to perform the Office of Male Parts in the Plant, these stand in the Place of Female. They receive a Dust from the Antheræ, which they deliver down to the Rudiment of the Seed, for its Impregnation.

From this Office of the Styles, the Section is nam'd, according to their Number: when the Style is only one, the Term is MONOGYNIA; this is also formed of two GREEK Words, and their Signification is, that the Plant has but one Female Part in the Flower.

Upon again examining the Flower of the CANNACORUS, we shall find in it, beside the single Filament, a single Style: it is flat, and grows to the Filament. This shews, that CANNACORUS, or properly CANNA, is one of the MONANDRIA, MONOGYNIA, or one of the first Section and first Class of LINNÆUS.

We imagine the Reader will find no Difficulty in comprehending the Sense of these two Words thus explained, and the Structure of this Flower. When he understands this, he is Master of LINNÆUS's first Class; for there is nothing more.

Thus easily do Difficulties vanish, when a proper Method of Explanation is laid down: and as the succeeding Classes in general depend upon the same Principle, they will be understood with more Ease than the first.

The CANNA is a Native of ASIA, AFRICA, and the hotter Parts of AMERICA: where it produces Abundance of Flowers in Autumn.

The Culture of the Canna.

The Seeds are to be sown in Spring, upon a common hot Bed. When the Plants have grown to a little Strength, they must be transplanted into another hot Bed; and thence when large and strong removed into Pots. These are to be set in Places not too much exposed to the Sun, though screen'd from Cold, and there they will live till Autumn: they are then to be remov'd to the Green-house, there to be preserv'd during Winter; and in the End of MAY they may be planted in good Earth, upon a warm Border: where they will rise to Flower in their full Lustre.

Some are fond of making this Plant flower the first Year, but it is then weak. The Flowers are neither so large or numerous, as they will be when the first Season has pass'd before their Appearance.

There are other Species of CANNACORUS, which we shall enumerate in a succeeding Part of our Work; and we shall observe the same Course in all other Instances. One Plant of a Kind is all we shall treat in each Number, till we have gone through the Culture of the whole Series. Few Words will afterwards explain the others: they would here perplex the Student, and take up those Pages devoted to the other Labours of Time.

Their

August.

Their Culture is the same with that of the first-nam'd Species; and the great Art is to prevent their flowering the first Year. This is to be done by Sowing late in the Spring, and not giving too much Sun.

The watering this Plant is an Article in which the common Writers will be apt to mislead the Gardener. They order it to be done largely;

if, as they direct, the Plant be frequently water'd, August. and set in a warm Place, it will commonly flower the first Year, which is what we have seen should be avoided. Let it not be expos'd to too much Sun, and it will need less Water: and being shelter'd from Cold, it will live well thro' the first, and flower the following Summer.

2. FIG-LEA V'D HIBISCUS.

Plate 1.
Fig. 2.

This is a Plant of distinguish'd Beauty; it does Honour to the Gardens of FRANCE and HOLLAND, and is worthy to be more frequent in our own. We shall endeavour to promote this, by shewing its Elegance and explaining its Culture.

Its common Name is ESCULENT MALLOW, the Fruit being eatable. Authors, in general, have called it a kind of ALCEA; but it is distinctly a Species of HIBISCUS: its proper Name is HIBISCUS *foliis quinquepartito pedatis calycibus interioribus latere rumpentibus*. HIBISCUS, with Leaves divided in a Foot-like Manner, into five Parts; and with the inner Cups bursting side-ways.

The Plant is four Foot high, robust, branch'd and spreading; its Leaves are large, and, in the highest Degree, pompous and elegant.

The Root is fibrous, the Branches are round and yellowish, and often purple at the Joints. The Leaves are numerous, and of a delicate green; those near the Bottom are divided, in the Manner of Fig-leaves, into five principal Parts; those toward the Top have only three Divisions, and sometimes scarce any.

The Flowers are numerous and large, their Ground Colour is a very pale but elegant yellow, and they have streaks of purple.

Luckily for the Student, the Parts in this Flower are large, as well as the whole: it will serve therefore excellently to explain one of the most abstruse Classes of LINNÆUS. It is here selected for that Purpose.

These Flowers are scattered at Distances along the upper Branches, and each is surrounded at the Bottom by a double Cup. The Petals are five; they are very large, expanded, and lightly folded toward the Edge. Of the two Cups, the outer one is compos'd of eight narrow Leaves, and remains with the Fruit: the inner one is form'd of a single Leaf, divided lightly into five Parts, at the Rim, and it remains with the other. The Seed-vessel is large, pyramidal, and furrow'd upwards.

In the Center of this Flower stands an obvious Arrangement of Antheræ, or Buttons: the Threads of these do not rise singly, as in many Flowers, but are united into a Body, and form a kind of Tube; from this grow the several Antheræ, which stand separate and clear. Thus are the Male Parts disposed in this Flower, and this determines its Class in the LINNÆAN System. That Author has arrang'd together the Plants whose Filaments thus unite into a single Body, in his sixteenth Class; the Title of which is MONADELPHIA. This is deriv'd from two Greek Words, and signifies Plants, *the Threads in whose Flowers are united into one common Fraternity*.

N°. 1.

Thus is the Student inform'd perfectly of this Distinction, and of the Meaning of the Term, by the Examination of a single Flower. He will know, in Respect of all other Instances, that when he sees a Flower, whose Threads are united into one Body, that Plant is one of the MONADELPHIA of LINNÆUS. The Mallows of all Kinds give him Examples.

This being the Disposition of the Male Parts in the Flower, it remains to enquire into that of the Female. The Style rises from a roundish Germen, and is longer than the Filaments; it is divided at the Top into five Parts, each of which has its separate Head.

LINNÆUS has not subdivided this Class according to his usual Custom, from the Form of the Style, there being a greater Object for this subordinate Distinction; this is the Number of the Filaments or Antheræ. Five is the smallest Number found in any of the MONADELPHOUS Flowers: the first Section therefore contains the MONADELPHIA PENTANDRIA; after this come those which have ten DECANDRIA; and after them, those which have more; under the Title of POLYANDRIA: this Plant is one of these last.

Its Culture is easy; but being native of a warmer Climate, the INDIES, it will fail if neglected.

The Culture of the HIBISCUS.

Let the Seeds be sown at the End of MARCH, upon a moderate hot Bed. When the Plants have three or four Leaves, let them be remov'd to another hot Bed: this will forward them finely against the first Months of Summer. When the Weather is settled warm; and cold Nights are no longer fear'd, let them be remov'd, in a showery Day, into a warm and well shelter'd Border, where there is Depth of good Earth, well broke by Tillage, and improv'd by rotten Dung.

Here let them be shaded and gently water'd, till they have taken Root; after which they must be kept clear of Weeds; the Ground about them often broke by the Hoe, and their Stems ty'd up to short firm Stakes. They must be then well water'd, and brought forward as much as possible: by this repeated Care, one Plant will produce at a time fifty Flowers, and they will be ting'd more or less with purple: often they will have a fleshy red throughout.

Let not the Reader suppose the Account of this Plant's Culture too particular: it is not only destin'd to this, but serves for other of the same Species brought from the warmer Climates. Thus COMMELIN first rais'd the Plant in the AMSTERDAM Garden, 1686. His Figure is not

C

a good

August. a good one; but he very justly, in his Description, speaks of its great Beauty, and recommends it to the World.

The other Species of *HIBISCUS*, worthy the Attention of the Curious, are, 1. The *MUSCHEUTE ROSE*; 2. The *POPULAR ALCEA*; 3. The *SABDARRIFFA*; 4. The *SYRIAN ALCEA*; 5. The *MANIHOT*; 6. The *ABEL MOSCH*; 7. The *CHINA ROSE*; and 8. The *BLADDER KETIMA*.

These are the Names by which those Plants are known, but they are all Species of the *Hibiscus*;

most of them we shall explain at large in other Places, according to their Nature and their Time of flowering.

Why they are by *LINNÆUS* refer'd to the *HIBISCUS* Kind, against the vulgar Arrangement, will appear from the Structure of the Flower, as we have here described it: that contains the Character of the Genus; and the Student is to refer to this Name every Plant with such Flowers.

3. GREAT LARKSPUR.

This is a Plant of considerable Beauty in the Flower, and of a pleasing Regularity in its Growth; its vulgar Name is *GREAT LARKSPUR*: the generality of Authors call it *Consolida regalis flore majore multiplici*: some, *Delphinium Ajacis*. Its proper Name is *Delphinium nectaris monophyllis caule simplici*. Thus *LINNÆUS* calls it in his several Works.

It is a stately Plant, upright, but little branched, and five Foot high.

The Root is fibrous, the Stalk is firm and striated; the Leaves are divided into very slender Segments; and the Flowers grow in a long and slender Spike, covering a third Part of the Plant.

In Nature they are plain and simple, but they are made so various by Culture, both in Form and Colour, that scarce any Description can suit them. We have represented them in each Form in the Figure, and shall explain them first in their natural single State, because in that the Characters are best disclos'd.

Each Flower is placed upon its separate Footstalk, and there stands naked without a Cup. It is composed of five unequal Petals, arrang'd orbicularly. The upper one is blunt and emarginated, and terminates behind in a long hollow Spur; the other four are broad, pointed, and expanded regularly. Within these stands a Part not found in all Flowers, and in few so conspicuous as in this; it is the *NECTARIUM*: this is a Gland holding a Honey-juice. Its Form is various in the several Plants where we observe it: in this it is split into two Parts, and placed forward and upward within the Petals of the Flower; behind it is extended in Length, and there the Spur serves it as a Scabbard.

The Filaments are numerous, and are inserted on the Receptacle; they are small, and turn up toward the upper Petal. Within that stand three Styles, with crooked Tops.

This is the Structure of the Flower, when single according to Nature; and it is thus the Student must learn from its Parts and their Disposition, the Place it is to hold in the modern System. He is made acquainted with two of the *LINNÆAN* Classes in the preceding Pages; and here he will learn the Characters of a third. This Plant he will perceive belongs to neither of the former, because it has many Filaments, and they do not unite into a Body. We are to in-

form him, that it is one of the *POLYANDRIA*, *LINNÆUS*'s Thirteenth Class: the great Number of its separate Threads, and their growing to the Receptacle, not to the Cup, is the Characteristic of that Class: its Name is form'd of two Greek Words, and signifies a Plant, in whose Flower are many Male Parts. The Term might have been made more expressive of its Character, for it is equally applicable to his Twelfth Class, of which we shall take Occasion to speak hereafter; but the annex'd Distinction sufficiently establishes it.

When the Student finds a Plant, whose Flower has numerous loose Filaments, and these adhere to the Inside of the Cup, he is to place it under this Twelfth Class hereafter to be explain'd; but when those Filaments grow from the Receptacle, it belongs to the *POLYANDRIA*, or Thirteenth.

In all these Characters there are certain Restrictions; that the Threads rise separate and free; that they have Styles in the same Flower; and that the Threads have no particular Distinctions among themselves in Point of Length. The first Character, their growing free, separates these Classes from the *MONADELPHIA*, already described, and some others; and the other Particularities here named distinguish them from certain other Classes, which we shall explain when we come to Plants belonging to them. We have prefer'd this Method of gradually introducing the Student to the Knowledge of the fashionable and favourite System, as it will thus come the most easily. The acquiring this is esteem'd the consummate Height of Botanical Knowledge, and is earnestly desir'd by all who study it: let the Reader lay before him a Flower, while he reads our Description of its Parts; and he will find it perfectly easy. This may always be done, because we treat of Plants now in Flower, and no other; adapting each Week's Publication to that Week's Produce.

As the Number and Origination of the Filaments in the *LARKSPUR* Flower, shews it to belong to the *POLYANDRIA* Class, the Number of its Styles, being three, shew it is one of the *TRYGYNIA*: a subordinate Distinction into Sections being founded in most of the Class as in the first, explain'd under *CANNACORUS*, and to be determin'd and understood in the same Manner.

This is the single great *LARKSPUR*, whose Colour is naturally blue or red; for there is without

August. Art so much Distinction : But when it is brought into Gardens and assisted by Culture, we see it while single, striped with blue, red and white; and in its finest State we have it very large and double. In this Case the Spur is lost, and the Number of Leaves is greatly multiplied : this, with the Variety of striping makes it extremely elegant.

The Culture is often too carelessly managed; but in the best Way there is nothing in it difficult.

The Culture of the LARKSPURS.

Some let them sow themselves, which they will do very well ; but then the Plants come up straggling and irregular ; and they have not the Advantages of a full Culture.

Others sow them in Spring : but then they flower late and weak.

The best Method is to sow them in Autumn : and the Gardener is to know, that his most useful Care will be employed now that they are in Flower, before the Time of feeding.

He wishes to have his Plants stand regularly the next Year ; therefore let him sow them, not leave that Work to Chance : and he would only have good Kinds ; therefore let him allow no Seeds of bad ones to ripen.

Let him not scruple to sacrifice now a few Plants to the Advantage of a succeeding Year. Let him go the round of his LARKSPURS while in Flower, and pull up all that are of an inferior Kind. Let him not leave one Plant that is weak in Growth, or that has small or single Flowers.

When he has thus removed the poor Kinds, he is to let the Seed of the others ripen. When it is full ripe on the Plants, let it be gently shook out of the Seed Vessels and spread thin upon a Table, and exposed four Days to the Air, but not to the Sun. It will then be in perfect Order for sowing.

Let a Border of fine Earth be well dug, a full Spade depth, and every little Clod broken : the best Breadth of this Border is five Feet, its Length may be at Pleasure ; and it must have an open and warm Exposure.

The Border thus prepared, let three Drills be opened all the Length of it ; and the Seed sown in them, not thick, but equally and carefully. Let it be covered an Inch and half deep, and sprinkle the whole Border lightly with Water as soon as it is in.

Thus let the Seed remain till Nature have thrown up the Plants ; and they have some little Height ; then let the Space between the Drills be weeded, and the Plants well examined ; let the weak ones be pulled up, and let those stout ones which remain stand two Feet and a half distant. After the clearing and thinning let them have a light Dash of Water, and thus leave them again to Nature.

Defend the Border, if exposed to dangerous Winds, by sticking here and there some Furze Bushes in it ; and after this no more is to be done, but to keep the Ground clear from Weeds. The Plants will rise very bold and noble, and their Flowers will stand thick, and grow to their best Bigness.

The common Directors bid the Gardener transplant his Larkspurs from the Seed Bed ; and those who have written with more Reputation, give him his Choice to thin them, or to transplant them ; but Experience shews the Choice is not equal ; and we guard him against their Errors. The LARKSPUR never rises to its full Perfection, but when it is left to flower in the Seed Bed, and is there kept clear and distant.

He who follows this Direction with Respect to these Plants, will find his Stock every Year improve in Elegance.

If the curious Reader chuse to employ more Care and Attention upon the Larkspur, he will find it very well returned : we shall direct the Method when we speak of the Secret of raising striped and double Flowers.

The several other Species are to be cultivated the same Way.

The principal of them are the great blue broad-leav'd Kind ; the tall LARKSPUR with Monks-hood Leaves ; and the Kind called Staves-Acre.

4. AFRICAN GERANIUM.

Plate 1. This Plant has every Recommendation to the Regard of those who delight in Vegetables : Beauty of Flower, Fragrance, and a peculiar Elegance in its whole Aspect. It is accordingly an universal Favourite ; and of all Plants the most generally received in Greenhouses.

The Vulgar call it GERANIUM without any farther Distinction ; not considering there are a Multitude of Species of the Plants of that Name. The common Writers call it GERANIUM AFRICANUM. Its proper Name is GERANIUM *calicibus monophyllis foliis cordato-orbiculatis incisiss zona notatis*. Geranium with one leaved Cups, and with rounded, but somewhat Heart fashioned Leaves marked with a Zone.

It is a shrubby but tender Plant, three Feet high, and irregularly, but not unelegantly spreading in its Branches.

The Leaves are large and roundish, but they are Heart-like at the Base, and indented at the

Edge ; and they are distinguished by an elegant and conspicuous Zone carried all round them.

The Flowers stand in large Tufts placed on the Summits of long Foot-stalks, and they are large and of a beautiful red.

The Seed-Vessel is long, slender, and sharp-pointed : it resembles the Beak of a Crane, or other long-beak'd Bird, and the whole Genus has thence obtained the English Name of CRANES-BILL.

Each Flower examined separately is found to be composed of five Petals, which are broad, irregular and expanded.

This stands in a Cup formed of a single Leaf, and has in its Centre ten Filaments : these spread asunder at the Tops ; but toward the Bottom they unite, and form a tubular Body, and they have oblong Buttons or Antheræ, which turn upon them.

The Student remembering what we have said of

August. of the Monadelphous Class under the Article *HIBISCUS*, will perfectly understand that he is to refer this Plant to the same Place: and observing that its Filaments are ten, he will know, that having referred it to the fourteenth Class, it belongs to the second Section of it, and is one of the *Monadelphia Decandria*.

There are beside this a Number of other *AFRICAN GERANIUMS*, which we shall particularize hereafter: and as they are all to be raised by the same Kind of Culture, we shall deliver the Method of it at large.

The Culture of the African GERANIUM.

The Soil in their native Place of Growth is so unlike what we have usually in Gardens, that the Care of their Culture must be begun farther back than is needful for many other Plants.

This is neglected, and yet *GERANIUMS* live: but we propose to tell the Possessor of them more than to make them live; how he shall cause them to thrive and flourish.

The Custom is to raise them in Pots of good Mould; and they will be very beautiful that Way: but in the Method we shall propose they will rival the glowing Beauty they wear in their natural Climate. There they grow principally where the Ground is warm, dry, and light, and yet has some Richness.

Such a Soil they find, formed of their own decayed Stalks, and others, mixed in a very sandy Loam.

Nature directs thus, and 'tis the Business of Art to imitate it. What Reason in this Case points out, Experience has very happily confirmed; and we shall therefore give it freely to the Reader.

About the present Season let an artificial Soil be prepared for these Plants thus.

Pare off the Surface of some Ground on which an old Stack of Wood has stood, and take only what is light and mellow.

This is a Kind of Earth composed of rotten Wood, and is like that of Willows, but more rich. To one Load of this add two Loads of good Garden-Mould, a Load and half of middling Sand, and half a Load of burnt Grass Turf. Mix all these well together with Spade and Rake, and pile the whole in a Ridge, and let it thus lie till the Month of January. Then let it be thoroughly dug up and turned, and thrown together in a Ridge again, where it is to lie till the succeeding Summer, the Time of using it.

During this Interval, if Weeds appear upon it, they must be cut down with a Hoe, for they will exhaust it; and the Intent is, that all its Richness should go to the Nourishment of the Plants.

The artificial Soil being thus prepared, the Method of propagating the Plants comes under Consideration. Their Seeds do not often come to a perfect Maturity with us, and the cutting grow easily: For this Reason it is best to use them for Propagation; and a large Number of Plants may be raised this Way with Speed and Success in the following Manner.

Chuse a Part of the Nursery which is warm

and well sheltered, and is not too much exposed August. to the Sun. Here prepare a Bed four Foot and a half wide, of what Length you please, and let it have a Foot and Half Depth of the finest Mould. Let the Mould lie half a Foot within the Ground, and a Foot above it; and let it be well broken and laid perfectly even.

At Distances place Hoops, that the whole may on Occasion be covered with Matting; and on the Surface draw Lines for planting the Cuttings at two Foot Distance Row from Row, and two and a half in the Rows.

Let the practical Gardener take this Maxim as he goes, That Regularity of Planting is useful, even where the Things are never to be seen; for beside the common Purpose of Beauty, it serves to distribute the Nourishment equally.

Toward the End of *May* is the Time for this Work; and when the Bed is thus prepar'd, let Cuttings be taken carefully from some good Kinds of *GERANIUM*, and from the most flourishing Plants.

Let these be immediately plac'd in the Mould, five Inches deep, and well set. Then give the Bed a Watering, and draw the Mat over it.

At Sun-set let the Mat be taken off, and so every Night; only drawing it on an Hour after Sun-rise in the Morning. This will give them the Advantage of the Dews; and they are to be uncover'd in the same Manner in the Day, whenever there falls a moderate Shower.

They must also be water'd frequently and moderately, as the Condition of the Ground requires; and, by this Practice, in five Weeks, they will take good Root.

If the Cuttings were planted the third Week in *May*, they will thus have taken tolerable Root at the latter End of *June*; and they will, in a Month more, have shot so many additional Fibres, that they will be in a Condition to remove. Therefore, the last Week in *July* will be the proper Time for that Operation.

The artificial Soil is now to be once again very well work'd over; and the Pots, into which the *GERANIUMS* are to be put, must be filled with it. These should be of a middling Size.

Bring them to the Bed, and after Sun-set plant in the young *GERANIUMS*. Each is to be taken up carefully, with as much Earth to the Roots as will hang about them; in this Condition it is to be set upright in the Middle of the Pot, which is to be half empty'd for that Purpose: then the Remainder of the artificial Soil is to be carefully put in, and clos'd about the Plant.

When they are thus fix'd in the Pots, they must have a gentle Watering; and the Pots must be set upon the Bed where the Plants stood, and in the Morning the Mat drawn over them.

They must be manag'd exactly as the Cuttings were, when first put into the Ground, till they are very well rooted in the Pots: they must then be brought out into a more open Place, and water'd occasionally, as the Condition of the Earth requires. About ten Days fixes them

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August. very well in their Pots; and they are then to stand out till the End of Autumn, at which Time they are to be carry'd into the Green-house.

There is nothing in which the Generality of Gardeners fail so much as Planting: Time must be allow'd, and Care taken, in placing these young GERANIUMS in their Pots: and the Eye of the Master should be over his Gardener at the doing it; for it is the last Trouble they require, and they will receive no Check from it, if rightly manag'd.

When they are in the Green-house, they must be set in the most airy Place, and not shelter'd by larger Plants. They must have, now and then, a little Water, and the Surface of the Earth must be stirr'd once in a Month. In Summer, when they are set out, the Earth should be taken off two Inches deep, and its Place supply'd by a fresh Parcel of the same artificial Soil.

This was the Practice I caus'd to be observ'd at the late Lord PETRE's, at *Thorndon*, in *Essex*; and it was owing to this that his GERANIUMS excelled those of all *Europe*.

5. OLEANDER.

Plate I.
Fig. 5.

This is a Plant eminently distinguish'd by its Beauty. The common or single Kind has been always esteem'd one of the greatest Ornaments of a Green-house; but the double OLEANDER as much exceeds that, as the finest Garden-Flower the wild Weeds that grow near it. It is a well-known Plant: the vulgar call it ROSEBAY, the common Writers NERIUM and OLEANDER, and some RHODODENDRUM. Its proper Name is *Nerium foliis lineari-lanceolatis ternis*.

It is a Native of almost all the warm Climates, *Syria*, *Palestine*, the *Indies*, and the *Greek Islands*; and it flourishes with us perfectly well, under that Degree of Care we allow our common Green-house Plants.

It is a shrubby Plant, of six Foot in Height: the Substance of the Stem is tender, and its Bark is brown. The young Branches are green and juicy. The Leaves are seven Inches long, an Inch broad; of a fine green on the upper Side, and silvery underneath. The Flowers are numerous, very large, and of a glorious Purple; they grow in Clusters all over the upper Part of the Branches, and cover the Plant with a most elegant Colour.

We have represented them in the Figure single and double: the latter is their Condition of most Elegance; but in the other we see them from the Hand of Nature; and it is there the Student is to trace their Structure, and learn the Class to which the Plant belongs.

Each Flower, examined carefully, is form'd of a single Petal, narrow at the Base, and spreading to a great Breadth at the Verge, where it is divided by slight Segments, into five Parts. Within stands the NECTARIUM, which is of a singular Structure, and adds not a little to the Beauty of the Flower. It is a kind of Coronet, terminating the narrow or tubular Part; and it is divided into Capillary Segments.

Deeper in the Flower stand the Threads or Filaments, from which the Class of the Plant is to be learn'd: these are five in Number, and they are very short, and lodg'd within the tubular Part: the Buttons or Antheræ are shap'd like Arrow-heads; they converge together, and they are terminated by long Threads like Hairs. In the Center, among these, stands the Rudiment of the Fruit; it is a roundish Button, split at the Summit, and crown'd with Stigmata, or Tops, the Styles of which are scarce per-

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ceptible they are so short. The Seed-vessel is double, and the Seeds are wing'd with Down. The Flower stands in a small Cup, form'd of a single Piece, divided into five Segments, and this remains with the Fruit.

If the Student recollects what we have written concerning the Method of LINNÆUS, under the first Article, he will easily understand in what Manner this Plant is arrang'd in that Author's System: the Filaments are five, and of the common Disposition: it is therefore one of the Genera of his Fifth Class. This he calls PENTANDRIA; a Term form'd of two *Greek* Words, as the others, and signifying a Plant in whose Flower the Male Parts are five.

From this, as in other Cases, the Student will also extend his Knowledge; and observe that whatever other Plant he finds, in whose Flower there are five Filaments plainly dispos'd, that is also of the *pentandrous* Class.

The Rudiment of the Fruit being single, it belongs also to the first Section of this Class: it is therefore distinctly one of the PENTANDRIA MONOGYNIA of LINNÆUS.

Thus Nature shews the Flower of OLEANDER, but Culture renders it double, and sometimes also strip'd. In this Case, it consists of numerous Petals, and in Form and Colour resembles a fine Rose; which it exceeds in Smell.

The *Amsterdam* Garden supply'd all *Europe* with this elegant Plant.

The Culture of the OLEANDER.

In Autumn prepare for it an artificial Soil, which is to lie all Winter for the succeeding Summer's Use, as in the former Instance. In *Holland*, they make it thus: Mix together two Loads of rich Garden Mould, a Load of rotted Leaves, from the Sweepings of the Garden, and half a Load of Sand. Let this be turn'd several Times during the Winter, and in this the double NERIUM is to be rais'd from Cuttings; for it rarely produces its Seeds, and scarce ever brings them to Perfection.

In the Middle of *May* let this Mixture be form'd into a Bed, of two Foot deep, and hoop'd for shading.

Plant good Cuttings as soon as the Bed is made up; water the Whole to settle the Earth to them, and cover it up two Days and Nights, admitting Air only at the Ends: After this, let the

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August. the Covering be lifted off during the Night, and when there are Showers; and carefully kept on against the Sun, and parching Winds.

The third Week in *July*, bring as many large Pots as there are Plants in the Bed. Take up some of the Soil, and fill them to the Depth of six Inches; then carefully take up the Plants with as much Mould as can be made to hang to them. Set them even in the Pots, and fill up carefully with the same Mould: after this, manage them as the GERANIUMS, and they will rise to their full Perfection.

One Reason why the Flowers and Green-house Plants of *England*, are inferior to those of the neighbouring Countries, is, that too many of our Gardeners plant them all in the same Soil: those who should inform them, are more deficient in this than in most other Articles; they order good

rich Mould for every one, and think there can be nothing better. Nothing can be more contradictory to Reason. Let them look out into the Fields of our own Country, and they will see some Plants on one kind of Soil, and others on another. Remove them interchangeably, and they will pine and languish. 'Tis so in other Countries; and those who have written best upon the Subjects tell us so. We shall trace, in their Accounts, what is the natural Soil of each Plant, and form such a one by Art for its Reception here. When we have seen the Result of this Practice at Home, or received certain Accounts of it from Correspondents in other Countries, we shall acquaint the Reader with that Authority; in other Cases, we shall propose what seems agreeable to Reason upon the same Principles, and recommend to him the Tryal.

6. CODAGA PALA.

Plate I. This is a Shrub of the NERIUM Kind, which Fig. 6. has not, that I know, been brought into the *European* Gardens, but very well deserves a Place, not only for its Beauty, but its Virtues. The Bark of it is the famous *Codaga Pala* or *Conesti*, newly introduc'd into our Practice, and found sovereign in Dysenteries. Writers on Medicine call it by these *Indian* Names: its proper one is *Nerium foliis ovatis acuminatis petiolatis*; ROSE-

BAY, with ovated, pointed Leaves plac'd on Foot-stalks.

The Trunk is firm and woody, and the Branches spread: the Leaves are broad, and of a whitish green, and the Flowers are white and fragrant. It is a Native of *Malabar* and *Ceylon*, and it may be preserved here, as other Plants, from that Part of the World. We shall hereafter give the Method, under proper Instances.

7. Great flower'd JASMINE.

Plate I. We admire, with Reason, the common JASMINE of our Gardens; but this Shrub deserves much greater Regard, having all its Perfections in a superior Degree: a more beautiful Leaf, a better Form of Growth, and a larger, fairer, and more fragrant Flower. The Gardeners call it *Catalonian Jasmine*. The common Writers, *Jasminum minus*. Its proper Name is *Jasminum humilius magno flore*.

It is a low but elegantly spreading Shrub. The Stem is woody, and covered with a grey Bark. The young Shoots are tender and green. The Leaves are pinnated, and of a lively green: three or more Pairs of Pinnæ stand on each Rib, and there is an odd one at the End.

The Flowers cover the Surface of the Shrub in scattered Bunches, four or five together, and they are large and elegant; their Colour is white on the Surface, but purple underneath, and they have often some purple on the Edge, and sometimes a little yellow.

The Buds are wonderfully elegant, the purple shewing itself on them in its full Lustre.

To learn to what Class in the LINNÆAN System this elegant Shrub belongs, the Student is to examine carefully the Flower. He finds this form'd of a single Petal, and plac'd in a little Cup. The Cup is made of one Piece, as the Flower, and is divided at the Edge into five Segments. The Flower has for its Bottom a long Tube, which at the upper Part breaks into five vast spreading Segments, resembling so many separate Petals. Within the tubular Part of the Flower are plac'd the Filaments: they are only two; and from the Rudiment of the Fruit rises a single Style of the same Length with them,

and it is split at the Top. The Fruit succeeding is a Berry.

The Student is now sensible that the Number of Threads in a Flower, determines its Arrangement in the LINNÆAN Method. His second Class comprehends Plants whose Flower has only two Filaments; and its Title is DIANDRIA. The Name is form'd of two *Greek* Words, and expresses Plants whose Flower has only two Male Parts. The Style being single, places it among those of the first Section of that Class; and the Student, without more Information, knows that this is one of the DIANDRIA MONOGYNIA, as are also the other Jasmynes; and all Plants else of the same Character.

The best Method of Propagation, is to bud this upon the common Jasmine; it loses nothing of its Beauty by that Practice, and it becomes more hardy. This Method we shall describe at large in a succeeding Number.

We have here, in these few Instances, led the Student a fair Advance in the LINNÆAN System; and inform'd the Gardener in the true Culture of so many Plants: not by Rote, or by transcribing from preceding Authors, but from Experience and Reason. We have now a few Rules to add respecting the Care of the Flower-Ground, the Seminary, the Kitchen and Fruit-Garden, for this Season.

The Work of Summer is over, and that of Autumn is not yet begun, therefore less is required in these several Parts than at other Times: we are happy that this Circumstance gave us Opportunity to enter somewhat at large on the more curious Part of our Work here, at the setting out.



Great Larkspur

Single Larkspur

Fig leaved Nictiscus

Scarlet Canna

Double Oleander

Single Oleander

Great flower'd Jasmine

Codaea Palo

African Geranium

August.

CHAP. II.

August.

The Care and Culture of the Flower-Garden, for the End of August.

THERE will be succeeding Numbers in which this Part of the Gardener's Province will make an Article of considerable Extent; but this is a Time when it is comprized under a few plain Articles.

Let him distinguish the Flowers of Summer which are going off, and those of Autumn which are coming in.

With Respect of the first, let him mark those he intends for Seed, and tie them up to Sticks, and cut down the Stalks of the others; and pull up those which are annual and perish after flowering.

Let him break the Mould about the Autumnal Plants that are coming to flower, cut off irregular Shoots, pick away dead Leaves, and give them every Evening a gentle Watering.

Let him clear all the Borders from Weeds; and gather such Seeds as ripen; chusing for this purpose the Afternoon of a dry Day.

Let him see his Grass is close mowed, and his Gravel clear and well rolled; and no more will be needful under this Article.

SECTION II.

The Business of the SEMINARY, for the latter End of August.

THE first Business of this Week, in the SEMINARY, must be to prepare Beds for Cuttings. Let each be two Foot deep, well dug, and broke; four Foot wide, and in a sheltered Place.

Numbers of Shrubs are to be rais'd this Way; and they fall under two Heads; 1. The *tender*; 2. The *hardy*: the tender are to be planted in Summer: and we have shewn their Culture under the preceding Heads. The hardy are to be set in Autumn, and the Preparation may be made now.

Plant in this Bed Cuttings of Ever-greens, and of the hardier Shrubs. Shade and water them at first; water them afterwards at Times, and they will root safely and firmly.

Honey-suckles of the several Species, will suc-

ceed well from Cuttings planted in a Bed, tolerably expos'd, at this Time; and Laurel, in a Place where there comes less Sun. Let the Laurel be planted five Inches deep, and his Honey-suckles four. This, Experience shews the best Depth. The common Practice of laying Honey-suckles is more troublesome; and the Cuttings, with tolerable Management, succeed as well.

Let the Gardener, when he has done this, go the Round among his Firs and other resinous Trees: if the Wind, or Accident have broke a Branch, or if there be any that run out irregularly, this is the Time to retrench them. Let him secure the Wound from Injuries, by tying Leather over it, and they will be in no Danger. Thus ends his present Week's Employment in this Part.

SECTION III.

POMONA, or the FRUIT-GARDEN.

CHAP. I.

Fruits now in Perfection.

THE Fruits to be named under this Head are the Remains of those of Summer: we shall in the succeeding Numbers enter on a larger Store, treating those of Autumn.

FAIRCHILD's Nectarine is now in its Perfection. It is a small Kind, round, yellow toward the Wall, and on the sunny Side, red: the Flesh is juicy, and its Taste very agreeable, but there is less of it than in most other Kinds.

The Elruge is now ripening, and is a fine Nectarine: it is larger than the former; yellowish toward the Wall, and purple on the sunny Side. The Skin shrivels as it grows full ripe: The Flesh is soft and melting, and it is of a fine Flavour.

Of the Peach Kind, the white Magdalene is now ripe. This is of a middle Size, round, and furrowed at the Side. Its Colour is white all over, or there is at the most, only a little dash of red on the sunny Side. The Flesh is white, and parts from the Stone. It is a very well tasted Peach.

SMITH's Early Newington is also now ripening. This is middle sized, round, and thick covered with a fine soft Down. It is of a pale green next the Wall; and of a fine Red on the sunny Side.

The flesh is firm and pleasant, and the Stone is purplish.

There is a Pear just ripe at this Time, which some esteem greatly. This is the green Chiffel. It is a middle sized Pear of a longish Shape; small toward the Stalk, and is always green. It is very juicy and delicate, but the Taste is somewhat flat, especially when too ripe. Therefore the Merit of this Pear, consists in the gathering it when just ripening.

The principal Plumb for this Time is the Fotheringay. It is a large red Plumb, and of an oval Shape: It is naturally dusted over with a fine Blue Powder. There is a deep Furrow on the Side, and the Flesh is white. It parts freely from the Stone, and is very sweet.

Those who dislike Sweetness in Plumbs; are not fond of it for this Reason; but many admire it.

The Turkey Apricot is now in its Perfection. It resembles the Orange Apricot, or common Kind, but it is larger and flatter, its Colour is yellow, and it is much marked with red.

The Gardeners are not fond of it, because the Tree is not a plentiful Bearer, but the Fruit is excellent.

CHAP.

August.

C H A P. II.

August.

Of the Care and Management of Fruit-Trees.

HERE, as in the other Parts of the Ground, the same Method is to be followed, and the same Operations come in Course. The lesser Fruit-Shrubs are at no Time so well transplanted as now; if there come a little Rain. The Currant and Gooseberry will take at once, if they be water'd, tho' there fall little or no Wet from the Clouds: but the Raspberry will not do well, unless it have natural Showers. There is more Care requir'd for this little Shrub than is commonly allow'd to it; and that is the Reason so many of the Plantations succeed poorly.

The common Writers of Gardening, copy from one another the Direction of planting Raspberries in *September*; but that is too late. Warmth assists greatly in their Rooting; and upon the first Success depends their future Strength. Whenever the End of *August* is showery, as it is now; there is no Time so favourable for this Plantation.

Gather the several Standard Pears and Apples as they ripen. Many of them will not be fit for a Month yet to come; but those which are ripe must be gathered. The practical Way to try, is this.

Gently turn up a few of them, and if they easily come off from the Boughs, it is a Proof they are ripe. In this Case, longer hanging

would do them Harm: but if they hold firm, they must be left till they will part thus easily. More than is thought depends upon the exact Time of Gathering; for, if pull'd too soon, they never acquire their true Flavour; and, if too late, they do not keep well.

The later Peaches are now advancing toward Ripeness, and they must be favour'd by a careful and judicious Hand: their Leaves have hitherto served the Purpose of sheltering and keeping them moist; but now all such as grow close about them should be remov'd. The Sun has less Power, and the Fruit requires more Heat; and less Moisture.

This is a Time for preparing Strawberry Beds for another Year. Let them be made in a good Exposure, and well dug. Let the Soil be a rich Loam, and let it be thoroughly broken: then let Lines be drawn regularly, at a Foot and a half Distance, and in these set the Strawberry Plants a Foot asunder. Water them well: they will take good Root before the Frosts come on; and there will be a much larger Produce, and of finer Fruit, than in the common Way of Planting. Gardeners act according to their Instructions, and they place them closer; their Instructors have misled them; and require Revival and Amendment in almost every Article.



S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

C H A P. I.

Products of the Kitchen-Garden now in Season.

THIS is a very plentiful Time of the Year for the Herbage Roots and Fruits of this Quarter; and we might, if we followed the ordinary Writers on this Subject, give a long List of common Things: but the Herb-woman knows without our Information, that Cabbages and Carrots, Parsnips and Potatoes come every Day to Market.

These Catalogues are the Abuse of Writing;

and their sole Excuse is, that they have been compiled by those who did not know what is its Use, or Merit.

Beside these, the good Kitchen Ground affords Fenchia, now in Perfection; a Plant not enough known in our Country, which we shall endeavour in a succeeding Number to render more universal, by directing its right Culture. There are also Chardons, and several valuable Melons.



C H A P. II.

Of the Care and Culture of the Kitchen-Garden.

THE Operations of the Flower-Garden and Seminary, are to be repeated in the Kitchen-Quarter, with little Variation, at this Season. The sweet Herbs and Medicinal Plants are now to be planted out, and the best Time is when it drips: if the Sky with-holds its Supply, the Labour of the Hand must take its Place, for this Season must not be pass'd over; Sage and Thyme, Rosemary and Lavender, Mint, Baum, and Winter Savory, are all now to be planted. This early Time will let them root well before Winter, and they will be secure from Danger.

Endive and Lettuce, sown in earlier Months,

should be now transplanted into warm and well shelter'd Borders, to stand thro' Winter. The Endive will be fit to blanch very early, and the Lettuces will cabbage soon in Spring.

Plant forward Beans and early Pease, chusing a warm Situation, and deep good Ground. It will be worth while also to put some Carrot-Seed into the Ground. Observe, that it must be weeded as the Plants grow up, and they must be pull'd up to proper Distances. If they survive the Winter they will come early to Perfection: but all depends upon their standing distant and clear, otherwise they will be Threads, though of their full Length.

E D E N:

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER II.

For the First Week of *SEPTEMBER*.

SECTION I.

FLORA, or *the PLEASURE-GARDEN*.

CHAP. I.

Curious Plants and Flowers now in their Perfection.

I. COMMON CAPSICUM.

Sept.
Plate II.
Fig. 1.

THIS is a Plant whose Singularity first gave it a Place in Gardens, which it has a Right always to preserve. The Flower is inconsiderable, but the Fruit is conspicuous, in the highest Degree: it serves the double Purpose also of Ornament and Use; for it affords an excellent Pickle.

Its vulgar Name is *Guinea Pepper*: the common Writers call it *Capsicum*, and *Piper Indicum*. LINNÆUS distinguishes it by the Name of *Capsicum caule herbaceo*: Capsicum with herbaceous Stalks.

The Plant is two Foot high, variously diffus'd in Branches, and but irregularly erect. The Leaves are undivided, long, and broad. The Flowers are moderately large, and of a whitish Colour, with a kind of purple Knob in the Centre. They hang on Foot-stalks from various Parts of the Plant.

The Fruit is very large, long, thick, and of a glossy Surface. Its Colour is an elegant Scarlet, and it resembles polish'd Coral.

The Flower examined accurately, is found to be constructed of a single Petal, tubular a little Way at the Bottom, and divided at the Top into five broad, folded, expanded, and pointed Segments. This Flower stands in a Cup, form'd of a single Piece, divided at the Edge into five or more Parts, which remains with the Fruit: in the tubular Part of the Flower arise five Filaments: these are short and small, but their Buttons are ob-

Numb. II.

long and large; they converge at the Top, and together form the Cluster in the Centre of the Flower. In the Midst of these stands the Style, which is single and blunt at its Extremity.

We observed to the Reader in our first Number, that the Fifth Class of LINNÆUS, comprehends under the Title of PENTANDRIA, those Plants in whose Flowers are only five Threads, *Capsicum* is one of these; and the Style being single, it is referred to the first Section of that Class. It is therefore one of the PENTANDRIA MONOGYNIA. These Terms we have explained already; their Sense is, that the Flower has five Male and one Female Part.

The Culture of CAPSICUM.

It is a Native of the warmest Climates of *America* and *Africa*; and is an annual Plant. It is one of those the Gardener must raise on hot Beds in Spring, to plant out into his Borders in the Summer.

To do this properly, several of these Hot Beds are requir'd one to succeed the other: each is to receive the Plants which the former have thrown up from the Seed, or raised to some Bigness.

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Sept. great Advantage; and only moderate Care is requir'd to preserve and manage them.

The Hot Bed being ready, sow the Seed: distribute it carefully, and see that it be about three Quarters of an Inch covered.

About seventeen Days, with good Management, bring up the Plants; and this is the Gardener's Signal for preparing his second Hot Bed. Common Mould does for covering the first; but, for this second, some rotted Wood, or decay'd Leaves should be wrought in; and about one fifth Part Sand. This is a Practice unknown to our Gardeners; but it is founded on Reason, and supported by Experience: the *Dutch*, with no Advantage beside that Secret, exceed us in this Branch of Gardening greatly. It opens the Body of the Mould, gives Passage to the Vapours from the Dung, and makes the Way easy for the young Roots of the Plants. As much as the Mould is impoverish'd by the Sand, it is improv'd by the rotted Wood or Leaves, so that it retains its full Strength, and has great additional Lightness.

Let this Compost be spread upon the second Hot Bed, five Inches deep; and when it is ready, and the Plants have some Strength, let them be remov'd into it in the following Manner.

With a small Trowel open little Holes, three Inches deep, and at eight Inches distance, in the new Hot Bed: with the same Trowel raise the young Plants; carefully preserve the Roots entire, and some Mould with them; and plant them regularly one in each Hole of the new Bed.

Fill up the Hole with its own Earth, and give them a gentle Watering.

On this depends the Shape of the Plants for Summer. In the *Paris* Gardens we never see an ill-shap'd *Capficum*, and with us scarce a good one: the Reason is, their Care in watering them upon the first Transplantation. It is the Nature of the Plant to spread irregularly; but ours are generally deform'd: and the Cause is, that we bear down the tender Stalk of the young Plant in this Watering, which it does not recover. The Holes of our best Watering-Pots are too large. The *French* use one that does not hold above a Gallon; they never half fill it; and the Holes are fit only to let it in Hairs; thro' this the Water spreads every Way like the lightest natural Shower.

The young Plants are now to be kept covered

at Night, and in the Day they are to have Air, by raising the Lid with a Brick.

The better the Weather, the more Air let the Plants have; and take Care no Drops, hanging on the Inside of the Cover, falls upon them. That would rot them; and the keeping them too close would raise them weak: with this Management they will root quickly; and get Strength. They should stand a Month in this Hot-Bed; and, at the End of that Time, they will require another.

This will appear a tedious Practice to the Unexperienced; but the Labour is not great, and it serves many other Plants at the same Time with this.

The Annuals are the great Grace of a Garden when the Spring and Summer-Flowers are gone: and they are so much of a Nature, that one Management serves for all. We shall, upon the succeeding Occasions refer to this, and therefore have been the more particular in the Description here.

The third Hot Bed must be covered deeper than the second: and from this the *Capficums* must be, after another Month, planted into small Pots, to be placed in another.

This fourth and last Hot Bed must have a deep Frame: as many Pots as can stand by one another must be put into it, and the Space between them is to be filled up with Earth.

A fine rich Compost, like the first, must be put into these Pots; and in this the *Capficums* must be planted with due Care.

While they are in this last Frame, the Cover must be more and more rais'd from Time to Time; and after about three Weeks, taking the Advantage of a warm cloudy Day, it must be taken off entirely.

Let this be repeated four or five Times in right Weather; and thus they will be hardened to the Air.

In the Middle of *July* they may be planted out into Borders, taking all the Earth of the Pot with them. Here they will require only gentle Waterings from Time to Time; and they will grow to full Perfection.

The Gardener has here the whole Process of raising Annuals, before him at one View. We shall occasionally, at the Seasons, when each Part is to be done, treat it more expressly; but this is a sufficient general Account of it; and by the Secret of this Compost he will succeed much beyond others.

2. GOLDEN CAPSICUM.

Plate II. This is not as the former an herbaceous Plant, but a robust Shrub. It is a Native of *Ceylon*, and has not, that I know, been raised in *Europe*; but with the common Care allowed to *East-Indian* Plants it may: and its glossy Leaf and golden Fruit would be a great Addition to the

Variety and Beauty of the Plants we keep in our Stoves.

The adding to the limited Number of these Plants, should be the great Endeavour of every Gardener.

This is a very elegant Species. Its Name accord-

Sept. according to LINNÆUS is *Capficum 'Caule' fruticoso*.

The Shrub is five Feet high, and full of spreading Branches. The Leaves are long and narrow, of a gay glossy green; and veined with Purple. The Flowers are small and white

with purple Buttons in their Centre; and they are agreeably scattered over the Tops of the Branches. The Fruit is three quarters of an Inch long; and moderately thick; its Surface is glossy, as in the common *Capficum*; but its Colour is a gold yellow.

Sept.

3. LAUREL-LEAV'D PASSION-FLOWER.

Plate II. This is a very noble Plant, worth the Ambition
Fig. 3. of all who pride themselves on their exotic Treasures; and happily suited to explain to the Student in our Science, one of the most abstruse Classes of LINNÆUS. That Author calls it *Passiflora foliis indivisis*.

It is a vast Plant of a singular and noble Aspect; and in its wild State, when well supported, eclipses all the vegetable Kingdom.

Its Stem is weak and unable to support itself; but it will climb the tallest Trees; its main Trunk winding like a Serpent round them, and its innumerable Branches spreading over their broad Tops, and covering their whole Extent with Flowers and Fruit, both in the highest Degree beautiful; and hanging from the outmost Branches in innumerable long and slender Twigs, that play with the least Wind, and are loaded with the same Flowers and Fruit. It is a Native of *South America*, but has been raised in *Holland* to its full Beauty.

The Trunk is covered with a rough grey Bark. The tender Stalks are green, and there rise yellow Tendrils, with the Leaves.

These are very large, oblong, broad, smooth, pointed at the Ends, wav'd at the Edges, and of a fine green.

The Flowers rise with the Leaves and Tendrils usually one Leaf, one Flower and one Tendril together; and for two Months of Autumn they are extremely numerous. They are very large, and of a Lilly Whiteness, variegated on the central Part with blue, red and yellow.

The Fruit follows singly each Flower, and is of the Shape and Size of an Orange, and of a Gold yellow.

The Flower more closely examined discloses more Beauty. It is placed in a large Cup composed of five coloured Leaves, which are large, long and pointed: the Body of the Flower is formed of several very broad and long Petals, which naturally spread out, and afterwards fall backwards: these are of a perfect snowy Whiteness. Within them is placed the *Nectarium*, forming a triple Coronet. The outer Circle of these three is large, and composed of long, slender twisted Filaments, and is of a celestial blue: this stands within the Circle of the Petals, and surrounds the Style. The others are shorter, smaller, and paler coloured.

The Filaments rise within the inner Coronet of the *Nectarium*, and they are in Number five. They are fixed at the Base of the Rudiment of the Fruit, and to the Style, which is there of

a columnar Form; and they spread outwards as they rise in Height. They are slender, and of an Orange Scarlet. The Buttons that lie on these are oblong and obtuse.

From the Parts where the Filaments are inserted, the Body of the Style rises upright, columnar and strait; and at its Top from an oval Bud, which is the Rudiment of the Fruit, there spread three Divisions which are largest towards the Extremity, and are there crowned each with a Kind of Head.

Such the Structure of this wonderful Flower; and it is in general common to the other Species of the same Name.

The World is indebted to LINNÆUS for explaining what that singular Part, the *Nectarium* of a Flower, is: it appears very particular in many as we have shewn, but in none so much as in this: and till we knew that such a Part was common to most Flowers, and perspicuous in many, none understood what this triple Circle in the *Passion Flower* was, or by what Name to call it.

Hereafter the Student will know, that when beside the Cup, the Petals, the Filaments, and the Style, he sees in any Flower some other singular Part, that is its *Nectarium*.

The Form is quite inconstant and uncertain; for Nature in no Part of Plants wantons so much, but whatever be its Figure, this is its Name.

Our Student who has been taught to refer Plants to their Class in the LINNÆAN System by the Number of their Filaments, must not rashly call this one of the *Pentandria* of that Author, because those Filaments are five.

The Number of those Threads characterises the Class only when they have the common and natural Situation, and rise free from the Bottom of the Flower; not when they are joined to one another, or to the female Part.

This we have observed to him before. Therefore as they are in this Flower joined to the female Part or Style; they constitute a new Character. This is the Distinction of a peculiar Class in the LINNÆAN System, which he calls *Gynandria*. It is a Greek Term formed of two Words, as the others; and expresses Plants in whose Flower the male Parts grow upon the female.

This is the twentieth Class of LINNÆUS; his whole System being comprised in twenty-four: and the *Passiflora* is of the fourth Section of that Class; the first Section comprehending those which have only two Filaments, the second, those

Sept. those which have three; and the third, such at have four.

As we have recommended to the curious the introducing this elegant Plant, we shall particularise its Culture.

The Seeds will shoot freely, and the Care must be to find what Degree of Heat is necessary for the Plants; or in better Terms, what Degree of Exposure they will bear. This is a Point in which our Gardeners that have the Care of exotic Plants, err more than any other; and there is none in which their Instructors in Books so much mislead them.

Many Plants are smothered in Stoves, that would flourish in the Greenhouse; and many encumber the Greenhouse, that would thrive in the open Air. We shall occasionally set this Part of practical Knowledge on a better Footing.

With Respect to the present Plant, let the Method observed in the raising it be this:

Let good Seeds be procured, and in the Beginning of *April* let a Dozen and a half of them be sowed in a small Pot filled with rich Garden-Mould, worked well, with one fourth Part of Pit-Sand.

Let this Pot be plunged into a moderate Hot-Bed, and there remain till the Seeds shoot: when the Plants have a little Height.

Let all but one be transplanted into separate Pots, and let these, with the other, be set in another Hot-Bed, where they may be train'd to some Strength.

Then let some of the Pots be set in a warm sheltered Place in the open Air; others in the Greenhouse; and others in the Stove.

From this Time let them have the common

Care that is bestow'd on other Plants, in the Places where they severally stand. Sept.

Let a little Water be given them at Times, and let the Pots stand near the Back of the Building. Let them be led to climb, by placing Sticks in an oblique Direction, and leaning backwards. From Time to Time let any decay'd Leaves that are seen on them, be pick'd off, and let them be train'd to the Wall. They will spread over it, rise to the Roof, and, being properly supported, they will take their Course, covering it, as they naturally do the Tops of Trees, and spreading their long Boughs to the Front, which will hang down the Windows.

The Particulars of the Care of Stove and Green-house Plants will be illustrated occasionally by Examples in the succeeding Numbers: we here lead the Way to it, by giving, with the Characters of the present Plant, this general Idea of its Culture.

Where Cuttings are to be had, it will rise freely from them, and much Time will be sav'd but the Plants will not be altogether so fine.

The common *Passion-Flower* which we see climb upon Walls and Houses, is much hardier than this; and requires less Care. It is best propagated by laying down the Branches. These will take root freely, and may be very well removed the next Year. They will stand the common Winters with us unhurt; and when there comes a severe one, if the whole Plant perish to the Ground, the Root commonly escapes, and shoots up again with Vigour the next Spring.

The right Time of removing this Plant is the Beginning of *April*, and it succeeds best against a south-west Wall.

4. Spotted CISTUS.

Plate II. This is a Shrub of very singular Beauty, and Fig. 4. is valuable for the long Time it continues flowering.

It often begins to disclose its Beauties early in *August*, and continues in Perfection by the Succession of Flowers till the Middle of *September*.

Our Gardeners call it the great *Rock Rose*, the common Writers *Cistus Ladanifera*, and *Cistus Ledon*: its proper Name is *Cistus arborescens foliis lanceolatis supra levibus Petiolis basi coalitis vaginantibus*: Tree Cistus with Spear-pointed Leaves, smooth on the upper Side, with hollowed united Foot-Stalks.

These Names given by LINNÆUS are long, but they are worth Attention and Remembrance; because they convey a distinct Knowledge of the Plant. They are short Descriptions.

It grows to seven Foot high, a spreading and well fashioned Shrub; the Stem is woody, and the Bark is blackish.

The young Shoots are slender, and of a glossy Purple. The Leaves are placed irregularly, and are long, narrow, wav'd at the Edges, of a

deep green above, and white beneath. Those toward the Top are in the Plant's Perfection covered with a transparent fragrant Resin.

The Flower is vast, and naturally of a delicate white: it is stained sometimes toward the Edges with red, and sometimes red entirely. In the Centre is a Tuft of Threads with yellow Buttons; and toward the Base of every Petal there is a lively black Spot. Each Flower is followed by a large Seed-Vessel filled with very small and very numerous Seeds.

The Flower examined separately, is seen placed in a five leav'd Cup; two of whose Leaves are smaller than the others.

The Body of the Flower is composed naturally of five Petals; but the Luxuriance of Culture sometimes adds a sixth.

The Filaments are very numerous: they fill their Centre of the Flower, and they adhere at the Bases, not to the Cup, but to the Receptacle. This is a Distinction much to be regarded; for on it depends the Arrangement of the Plant.

Sept. We have before observed, that when the Threads are numerous, and in this Situation, the Plant belongs to the Polyandrous Class; whereas had they been fixed to the Inside of the Cup, it would have been one of the Icosandria.

We have said before, that it is unlucky the Author had not characterised these Classes, as the others, by a Name expressive of their Difference: the Student will find it so. It will require more Attention of Mind to retain these, than all the other Distinctions.

The Culture of this Plant is easy, and the Care needful to be employed about it is less than is commonly imagined. It will stand our Winters in a well chosen Situation; and it will add vastly to the Beauty of our Plantations of the hardy Shrubs.

It may be propagated by Cuttings in the Summer Months: but the Seeds shoot freely; and this is the Method to have handsome Plants; which is a Consideration that will be of great Weight with us in the succeeding Articles.

We have observed, that Annuals are generally spoiled in their Form of Growth by heavy Waterings while young; and as we are inferior to our Neighbours in those Species, for that Reason; so we fail in the Shape of our Shrubs, because we raise them from Cuttings.

'Tis an easy and an expeditious Method; and the first of these Considerations recommends it to the Operator, the other to the Owner: but let the Gardener be considered as a Servant; and let the Proprietor consider how well a Year is lost in the Growth of Shrubs; that will be thus made handsome for his Life.

For these Reasons let this, and the whole Train of Cistus's beside, be raised from Seed in the following Manner.

In the last Week in *March* prepare a moderate Hot-Bed; cover it five Inches deep with pure Mould without any Mixture, and in this sow Cistus Seeds. Cover them an Inch deep, and just sprinkle the Bed with Water when they are in.

The Plants will shoot freely, and here let them stand till they are four Inches high.

Give them Air at Times; and when they have this Growth, prepare a Bed for them thus.

In a warm Quarter of the Seminary dig a Trench a Foot deep and three Foot wide; fill it with fresh cut Grass; and tread it down.

Mix three Loads of good Mould with one of burnt Turf, work them well together, and with this Compost cover the Grass: let the Bed rise a Foot and a Half above the Surface, and spread each-way a Foot beyond the Outline of the Trench.

Sept. On this Bed draw three Lines length-wise at equal Distances, and at every eighteen Inches open a small Hole: into each of these Holes put a Plant of *Cistus*. Place it carefully, and settle the Ground by a light watering.

Keep the Bed clear from Weeds; and often water the Plants slightly.

Thus let them stand open till Winter: then defend the Bed by a Reed Fence at each End, and Furze Bushes before and behind, stuck up dry, and about two Foot high.

Thus leave them the Winter: if it be severe, some will perish; but the Remainder will be too hardy for all succeeding Dangers.

In the *April* following mark out the Places where they are to stand, and dig large Holes for them. Break the Earth well about the Holes, and into each put one Plant.

Chuse a dripping Day for this; and as this is the last Trouble they will require, let it be done carefully.

They will thus take Root by the Assistance of a few Waterings; and having been raised hardily, they will stand safely.

The Care is now to train them, which is very easy. They naturally rise with an erect Trunk, which spreads at about two Feet high into Branches.

The irregular Shoots must be taken off, and the rest favoured; and thus 'tis impossible to miss of having hearty, handsome Shrubs. A dry Part of the Garden is best for them; and they should be sheltered from the North and East.

This is the right Conduct for the raising this Species of flowering Shrub; and we have given it the more at large, because it suits also with many others.

We see this Species cramped in Pots, and smothered in Greenhouses; and thus its Flowers are few and weak, and always of a dead white.

Let its Roots have their full and free Scope of Ground, and let the Plant have Air, and they will open by thousands; the Petals will be tinged with a fleshy Purple, and their Spots will glow.

The Nursery Men spoil their Shape by raising all from Cuttings; the Gardeners make their Seedlings weak by over nursing. When they have raised them in a Hot-Bed, the common Practice is to remove them into Pots, and keep them under a Hot-Bed Frame in Winter.

This lays them open to every chill Blast, and makes them weak and tender.

The common Writers give the Choice of either Method; but they do wrong: the open Exposure is beyond all Comparison preferable.

5. CRIMSON AMARYLLIS.

Plate II. The most vulgar Eye is struck with the Beauty of this Plant, and it very well deserves the Title of Elegant. The common Authors, *Lilium Americanum*, and *Lilio narcissus Polyanthos*. Its proper Name is, *Amaryllis spatula multiflora corollis* N^o 2.

campanulatis aequalibus genitalibus declinatis. *Amaryllis*, with many Flowers from the Cup, and those equal, and of a campanulated Form, and with the Thread crooked.

The Root is large, and of a rounded Form;
F the

Sept. the Leaves are long and flaggy, but of a fresh and very lively green. The Stalk is round, firm, upright, green, and juicy. The Flowers stand at the Top, several rising from one Point together out of a common Scabbard, and spreading out each Way to form an elegant Cluster.

Each Flower is very large, and uncommonly elegant: its Colour is a fleshy Crimson; and in the Centre there is a large Circle of yellow, terminated every Way by a kind of Rays.

Each separate Flower grows naked to its Footstalk, without a Cup; the Scabbard at the Top of the main Stalk serving that Office for all.

The Body of the Flower is compos'd of six broad, wav'd and pointed Petals, rising small and slender from the Base, and spreading elegantly at the Opening. Within stand six long and very conspicuous Filaments, with large Buttons at their Tops; the Filaments droop and bend, and their Buttons rise upwards. In the Center of these stands the Style, a little shorter than the Filaments, bending in the same Manner with them, and parted at the Top into three slender Segments. The Seed-vessel is oval, and contains, in three Cells, numerous moderately large Seeds.

The Student here becomes acquainted with a new Class of the LINNÆAN System. He sees the Filaments rise free and regular; and he finds their Number six: it is a Number not seen in any of the preceding Plants, and it makes a Class different from any of those to which they belong: this is the sixth of LINNÆUS; its Name HEXANDRIA; form'd of two Greek Words, as the preceding, and signifying Plants in whose Flower there are six Male Parts. The Style is single, therefore it belongs to the first Section of that Class, the MONOGYNIA. The Student, from this Example, will learn how to dispose all other Plants, whose Flower has six Threads and a single Style: they are of the *hexandrous* and the *monogynous* Kind.

The common Writers distinguish a deep purple *Amaryllis*, as the *Belladonna Lilly*, distinct from this which they call the Red Lilly; but we write to guard the Student against their Errors. LINNÆUS has established this Point in his *Species Plantarum*, Vol. I. p. 293.

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Sept. rarely good; but this is owing to an Error in the Management, so very flagrant, that one wonders any, who have either practis'd or read the least of Gardening, could fall into it.

The Roots are taken up at random, and planted with a foolish Care, in Boxes of damp Mould. Thus they are weaken'd by being removed at a wrong Time, and they rot with the abundant Moisture.

Every one knows the Roots of all this kind of Plants will bear to be kept several Months out of the Ground, taking them up at proper Seasons; and thus they may be transported without Fear of Accidents.

It is the Course of Nature in this Plant, that the Flowers appear before the Leaves.

About this Time, the first Week of *September*, a naked Stalk rises to support the Flowers; soon after come the Leaves, and they keep green till *May*. All these Plants have their Time of growing, and their Period of Rest. These are the Months in which the Root is employ'd to take up Nourishment, and to convey it to the Stalks, the Flowers, the Seed-vessels, or Leaves: but, toward the End of *May*, the Leaves fade, and nothing else rises till the succeeding *September*.

This is the Time of Rest in the Plant; but not all of it: the Fibres are shot out in *August* for the Nourishment of the *September* Stalk; so that the Time of absolute Rest, is the End of *May*, all *June*, and the Beginning of *July*. Within this Period let the Roots be taken up in the native Place of the Plants Growth; let the Earth be clean'd from them; let them be spread to dry gently, and then ty'd up in Bags. Thus they may be sent over to *England* in their full Vigour.

There will be thus no Error in taking them up while growing; no Danger of their Rotting in coming over: they will be kept in the same Condition, as if bought from some careful Gardener, who had taken them out of the Earth in the due Course of his Profession, and they will grow freely.

They require Heat to produce their Flowers; and the best Management is to plant them in a Compost, half Mould, one quarter rotted Wood, and the other quarter Sand. In this they are to be carefully planted; and the Pots to be set in a Hot Bed of Tanners Bark. Less Heat will keep them alive; but thus they never fail to flourish.

6. Mutable HIBISCUS, called the CHINA ROSE.

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Fig. 6.

We introduce here to the Student's Knowledge, perhaps the most specious Shrub the World affords.

The Number, Beauty, vast Size, and Variety of its Flowers, claim very well that Character.

It is a Native of the East; and we see its Figure represented frequently in the *Chinese* Works on Screens, and in their Japan, and larger Works in Porcelain.

It was supposed at one Time in those Works

too great for Nature, and the Wantonness of the Painter's Fancy; but we are now better acquainted with it, and nothing more deserves to be made universal.

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It is a large Shrub, and with proper Care will spread its Branches in great Regularity, or rise in a single Stem as a Tree. The Leaves are broad and deeply divided, sometimes into three, more usual into five Parts, which are pointed and serrated. Their Colour is a lively green, and they are rough to the Touch. The Flowers are very numerous, and of the Bigness of the double Piony; which they equal also in the Multiplicity of Leaves or Petals.

They give a vast Glow by their Size and Number; and their Variety of Colours charms the Eye yet more. They have distinctly three Appearances. As they just open from the Bud they are of a milky white: when half blown they are ting'd with a fleshy red; and when at their full Perfection they are of a deep Purple. Their Petals stand in three or more Series, and they are curled and crumpled, so as to reflect the Light in a Variety of Shades and Tincts. The Eye may look with Wonder upon one of them many Hours together.

The Student, examining this Flower attentively, finds how they err who call it a Rose. It has a double Cup, like that of the Fig-leav'd Hibiscus, described before; and in its Centre stand numerous Threads, not growing separately from the Cup, as they do in the Rose, which is an *icosandrous* Plant, but united into a kind of Tube in

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The Culture of the CHINA ROSE.

Obtain good Seeds; and prepare this Compost for them. Mix equal Quantities of rotted Wood, from the Bottom of an old Stack, and of fine Garden-Mould; break these thoroughly, and sift them. Then fill two Pots with them, within two Inches of the Rim. Lay in about twenty Seeds upon the Surface of the Mould in each Pot, and sift more over them, till they are covered an Inch. Set one Pot in the Stove, among the tenderest Plants, and plunge the other in a hot Bed: thin the Plants when they rise, as directed under a preceding Head, in this Manner of Sowing; leaving only the two best in each Pot, and placing that from the Hot Bed after the Plants are gradually harden'd, in the Green-house; the other remaining in the Stove.

Give them as much Air as they can bear in their several Places: pick off dead Leaves, and give occasionally a little Water. To this add gentle Training of the Stalks; and Experience will shew, much better than the dogmatic Rules of Writers, how much Exposure the Plants will bear.

This is universal, that the less Heat is given a Plant, unnaturally, provided there be enough to keep it well alive, the better it flowers.

7. *The POMEGRANATE.*

Plate II.
Fig. 7.

Good Care and favourable Seasons will ripen the Pomegranate Fruit in England; but if that never happened, the glossy Leaf and the Scarlet Flower render the Tree worthy a Place in the best Gardens.

The common Writers call it *Granatum*, and *Malus Granata*: its proper Name is *Punica*.

It is naturally a straggling Shrub, breaking from a small Height into numerous Branches; but it may be trained, by proper Management, into the Form of a Tree; or led over a great Extent of Wall.

The Trunk is covered with a rough brown Bark; the younger Shoots are reddish.

The Leaves resemble Myrtle; but they are of a yellower green, and of a glossy Surface: they have high Ribs on the under Part, and when bruised they smell strong and disagreeable.

The Flowers grow frequently at the Extremes of the Branches, and on young Shoots from other Parts: they are very large and very beautiful, deep, hollow, rumpled, and of a glowing scarlet.

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If left ungathered it will burst upon the Tree, and show its crimson Grains with vast Beauty.

To know its Place in the LINNÆAN System, the Flower is to be examined more distinctly.

Its Cup is large, deep, hollow, and divided into five Segments, at the Rim; and, much to the Advantage of the Shrub, it is of the same scarlet with the Flower.

The Flower expands from its wide Verge, and is formed of five large Petals: they are rounded uneven, and inserted in the Cup.

In the Centre stands a great Cluster of Filaments, as in the preceding Plant; but with this Difference; here they are inserted in the Cup. This, as we have observed, makes the Distinction between the ICOSANDROUS and the POLYANDROUS Plants. This therefore is one of the former, the ICOSANDRIA, the twelfth LINNÆAN Class.

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We cannot recommend a better Method to the Student, for fixing in his Memory the Distinction of these two Classes, than reading their

Sept. their Characters, and comparing them with Nature in the *Pomegranate* and *Cistus* Flowers.

The Filaments in this are terminated by oblong Buttons; and the Style rises single in their Centre.

This places the *Pomegranate* in the first Section of the twelfth Class, and shews it one of the *Icosandria Monogynia* of LINNÆUS.

The Culture of the POMEGRANATE.

Let some Branches of a flourishing and healthy Tree be laid for Propagation in this Manner.

Dig Holes in the Places where they will best come, and fill these to eighteen Inches deep with rich fine Mould. Lay down a Branch in each Hole; cover it six Inches deep, and let its Top be a Foot out of the Ground.

Keep the Earth moist, by now and then watering it during the dry Time of the Summer, and there will shoot into it many Roots from the buried Part of the Branch.

Thus let it lie the Winter; and let it be taken from the old Tree, and transplanted the next Spring.

The exact Time is just before the Tree begins to shoot.

In Trees less ready to take Root, the Branch that is to be laid may be pierced with an Awl, or slit, or twisted: but in the *Pomegranate* these Methods are not needed; the plain Method here described answers sufficiently: and if the old Tree have Branches near the Ground, the Trouble is no more than this.

If it be necessary to lay a Branch that cannot be brought down to the Ground, some Mould must be raised to a proper Height for it: a Basket of Earth must be placed on a Stool, or

other Convenience, and the Branch must be laid in that in the same Way as if it had been in the natural Ground.

Thus is the great Article of laying performed: and in this Manner shall we, in the Course of the Work, occasionally lay before the young Gardener the whole Practice of his Profession, as we explain the System to the Student.

The Season being come for removing the Layers of the *Pomegranate*, let a proper Place be fixed upon for their Reception; for on this will depend their fruiting.

The *Pomegranate* requires a rich Soil and a warm Exposure: while it is thus open to the Sun, and well supplied from the Earth, it must be defended from the north and east Winds; and then by proper Management it will produce Abundance both of Flowers and Fruit.

We have observed, that the *Pomegranate* flowers at the Ends of the young Branches. Therefore the weak Boughs of the preceding Year should be cut out, and the stronger shorten'd.

This promotes new Shoots in Abundance; and when a Tree is covered with these, it will at a dry Season be covered also with Flowers.

On this depends the Management of the *Pomegranate* Tree. It thrives best against a Wall; where the Branches should be laid half a Foot asunder; and in a Direction nearly horizontal, but a little inclining upwards.

It is a common Custom to prune the *Pomegranate* in Spring; and to this is owing its so seldom ripening the Fruit.

This delays the putting out of the Blossoms.

Let the Tree be pruned at *Michaelmas*, the long Shoots cut off in Summer, and a due Soil and Exposure allowed, and will always bear large Fruit, and in all good Seasons they will ripen.

C H A P. II.

The Care and Culture of the PLEASURE-GARDEN, for the Beginning of September.

LET the careful Gardener add to his former Week's Care in this Part, the frequent watering of his Autumnal Flowers, in the open Ground. Let him pick dead Leaves from the Stove and Green-house Plants: let him stir the Earth about such of them as are flowering, or going to flower, and give them slight but frequent Waterings.

Early and late let him be out in Search of Slugs and other Vermin.

Let him pick away dead Leaves also from his Shrubs; and keep the Borders clear of Weeds, the Grass well cut, and Gravel roll'd and weeded.

If the Weather be showery, he may spare his Waterings in Proportion.

'Tis little he has to do in this Part for the present Week; but let it be therefore done the more punctually. He will have so many essential Things to do the succeeding Time, that all these lesser Matters should be carefully dispatched now.



Sept.

SECTION II.

Sept.

The Business of the SEMINARY, for the Beginning of September.

THE Season for transplanting is at hand, and there are many thousand Seedlings whose Size does not fit them for their Places in the Garden, though they require to be remov'd from those where they were rais'd. Some Borders must be allotted for this Service, and now is the Time to dig them: if they are loamy and rich, and tolerably fresh, nothing is needed more than good sound digging and breaking with the Spade. If the natural Earth be too tough, throw in Ashes; and, if exhausted by repeated Growths, dig in good mellow and well rotted Dung; but not too much of it.

Go the full Spade deep in every Part, break every Clod, and take up every Fragment of a Root that comes in the way. The Dew's will mellow and enrich the Soil; and to their Influence, and the Rains, it should be left till open'd for receiving the Plants. This is a Practice vastly preferable to the opening it just at the Time of using.

This is the Preparation for those which are to be remov'd; and when this is done, the next Care is demanded for those that are to stand longer where they are. Clear away all Weeds from these. Where they are too close for the Spade, cut the Surface of the Earth well with a stout small Hoe; and where they are so far a-part as to give Room for digging, never spare it. The Spade the best of all Instruments of Culture; none divides and breaks the Soil so thoroughly.

Every digging of this kind gives the Trees and

Plants all the Good of Transplantation, without the Disadvantages. Let us once represent this properly to the Gardener.

The Benefit of Transplantation is, that the Roots being taken off at the Ends, send out innumerable new Fibres; and that there is a fresh-dug Earth, light and open, to give them Passage, and full of Nourishment to supply them. The Disadvantage is, the Check they receive by the Removal, it being some Time before new Fibres shoot, or Nourishment is received: now, in this Method of Digging, the Ends of all the spreading Roots are cut off by the Spade, and there is immediately thrown upon them a Quantity of fresh broken Mould. They have therefore all the Advantage given by transplanting; and so many of the more perpendicular Roots are left untouch'd, that there is a Supply from them while the other Fibres are preparing, which prevents the Check.

Thus let the practical Gardener understand the Reason of all his Operations, and he will know how to perform and what to expect from them.

Trim up those Shrubs which require the Knife; and train the rest by Stakes or Cords to their proper Form.

Pull up by Hand all Weeds from among Seedling Trees and hardy Plants; and having given a good Watering to settle the loose Earth to them, after the Disturbance from tearing up the larger rooted Weeds; leave for this Week that Part of the Ground.

SECTION III.

POMONA, or the FRUIT-GARDEN.

CHAP. I.

Fruits now in Perfection.

THE several Kinds nam'd in our last Number continue good; or where they are not favour'd in Soil and Situation, they are but beginning now to ripen: to these we may add, in favourable Grounds, and under the Care of good Gardeners, for the present Week,

1. The VIOLET NECTARINE. This is a moderately large Kind: it is whitish toward the Wall, and of a deep blueish Purple on the sunny Side. The Skin is tolerably firm, the Pulp is full of Juice, and very rich; and the Stone is Blood-red.

2. The MONTALBAN PEACH. This is a middle-siz'd Peach: of a round Shape, without any Point, but with a Cleft on one Side. It is all over of a fine bright Red, except what is just next the Wall, and that is of a whitish Green.

The Flesh is rich, and parts freely from the Stone.

3. The right ORANGE BERGAMY PEAR: this is now in Perfection. It is yellow, but a little reddish on the sunny Side. Its Taste is very agreeable, and it is tender and juicy. Its Shape is roundish, but hollow'd at the Eye, and a little pointed at the Stalk. The Tree does very well as a Standard in the Dwarf Way, and is a plentiful Bearer.

4. The DRAP D'OR PLUM: this is now ripe on Standards, and is better from these than from the Wall. It is a yellow Plum, spotted with deep red on the sunny Side. It is one of the smaller Kind, and its Shape is longish: it has a remarkable Dimple on each End, and the Stalk is short. The Flesh is yellow and very rich, but it does not part freely from the Stone.

Sept.

C H A P. II.

Sept.

Of the Care and Management of Fruit-Trees.

THE Time for planting, in this Article, approaches as in the others, and our Gardener must prepare for it in the same Manner. Wherever he intends to set new Trees, let him now dig the Ground. Let him cut it to a good Depth, and break the Clods well, and then lay it even. We have given the Reason of this Practice before. The Earth will be improv'd by the Air, Rain and Dews, as much as by Manure.

This Preparation being made in order for new Trees, let him go round his others. With Respect of these, the Business turns upon two Points, the gathering such of their Fruits as are ripe, and the preserving of the rest; for the Devourers and Destroyers of them are at this Time innumerable. The Birds, Commoners of Nature, peck at what they please; they taste and leave, and taste again of others; and what they wound, Myriads of lesser Creatures follow to destroy. The least Fly will attack the largest Fruit when these have broke the Skin. The first Care is therefore to defend from them. They attack the ripe Fruit most; and therefore the first Way of guarding against them, is by gathering what is ready for Use and most in Danger.

The chief Merit of the Gardener, in this Respect, is the supplying the Table with them in the utmost Perfection, and the Art of Gathering, which is very little understood or thought of, is a very essential and material Article.

I have seen one common Custom among Gardeners, which is to go out for Fruit an Hour before it is to be served at Table; and this they think very meritorious, because it will be fresh.

I have seen also a contrary Practice, which I shall explain, together with its Reasons; but first, in order to shew its real Use, this Fact must be inserted.

Two Gentlemen, Relations and Neighbours, who had the same Soil and the same kind of Trees, and those, to all Appearance, manag'd in the very same Manner, found a vast Difference always in the Fruit: it was so great, that their Company never fail'd to perceive it as well as themselves; and when it came at last to be explain'd, the whole Cause was, that the Gardener of him whose Fruit was worst, gather'd it just before it was wanted, and the other much earlier. This seems to contradict Reason, Freshness being esteem'd the great Article in the Nicety of Fruit: but it is only a seeming Contradiction.

Let any one examine the State of Plants in general, in Summer, and he will find it this; as the great Heat of the Day comes on, their Leaves begin to flag; and they droop more and more till the Cool of the Evening. The Reason is, the great Evaporation of their Juices by the Sun's Heat: they grow flaccid from toward Noon till near Sun-set: then the Heat is over, and the Dews refresh them: they continue recruiting and recovering during the whole Night, and they are firm and lively in the Morning.

The Case is the same in Fruits, only it is not so easily perceived. At Noon they are exhausted and flattened, and they are heated to the Heart: all this renders them dead and unpleasing. They begin to recruit toward Evening, as the Leaves; and in the same Manner are in their full Perfection at early Morning. One Hour after Sun-rise is the Time for gathering them: this was the Secret of the successful Gardener, and this every one should practise.

Let him take some Fruit-Baskets of open-work, cover them with large Leaves, and at Seven in the Morning go out to gather his Fruit. When he has carefully chosen what is ripe, and laid it handsomely in the Basket, let it be plac'd in a cool but not damp Room, till it is wanted.

When the ripest are gathered, the rest are to be preserved: and with Respect of Birds, some Lime-twigs and Trap-cages should be placed, and Lines of Feathers hung about the Place.

This, with frequent frightening them away with a Pistol charg'd with Powder, will be a good general Method of guarding them; but more Care is to be taken of some particular fine ones. Grapes and Peaches are now most in Danger, and the same Method should be us'd for both.

Let the Gardener get some fine thin white Crape, and cut it out in Pieces of proper Size: let him observe which are the finest and most perfect Bunches of Grapes, and cover them up with Pieces of the Crape, tying it lightly round the Stalk, just over the Top of the Berries: thus there will be several Bunches of the finest Grapes preserved in so many Bags, and they will ripen to Perfection, without being expos'd to Insects. The Gardener who shall follow this Practice, will be able to send up such perfect Bunches as can be seen at no other Table.

The same Care is to be taken with the Peaches; the Places must be mark'd where the best grow, and Pieces of the Crape nail'd over them; not singly, for that would be endless; but a large Piece to preserve ten or a dozen.

The common Practice of hanging Nets over Fruit-Trees, has its Use; but in a limited Way. They keep off Birds; and are so far serviceable; but Flies are not prevented from their Depredations. Among these the Wasps are the worst; and too much Care cannot be taken in guarding against them. The Crape will preserve such particular Parcels as are covered with it; but as a great deal is left open, all Care must be taken to destroy this Enemy. Bottles of Sugar-water, hung in various Parts of the Trees, are of great Service against this Species, and many others; but they give very imperfect Directions who content themselves with advising this.

Wherever a Wasp is seen, it should be destroy'd with Care; for one Wasp that escapes at this Time, and survives the Winter, will lay the Foundation for a Swarm.

The Destruction of them singly at this Period, and

Sept. and the seeking and destroying their Nests in | Fruit from these most troublesome of all their De- | Sept.
 Spring, are the two great Concerns for guarding | vourers.

S E C T. IV.

CHLORIS; or the KITCHEN-GARDEN.

The Products of the Kitchen-Garden, mentioned in our last Number, continuing in Season without any particular Addition, we shall bestow the succeeding Pages of this, upon its Culture.

THE same Directions that are proper for the Nursery, come into Force here. Weeds will rise in every Place; they are equally hurtful to all Crops, and they must be destroy'd every where with the same Care. According to the Condition of the Crop various Methods are to be us'd for this: the Spade is the best; the Hoe the least effectual: and there are Places here, as in the Nursery, where neither can be us'd, but all must be done by Hand.

Where the Rows stand distant, nothing can be so well as digging up the Ground between; this, to the larger growing Plants, has the same Advantage as the digging among the young Trees; but the present, is a Season when a younger Growth is more in Danger. There will be, in a well-ordered Garden, a Parcel of Collyflowers rising to head; and there will be young Spinage; and Turneps of a somewhat longer Growth; these will be the Crops most requiring weeding.

In the common Way of Planting, the Hoe must be brought in among the Collyflowers; but when we come to the Season of transplanting these, according to the Principles on which this Work is founded, we shall direct the placing them so distant, that the Spade may be brought in between, and this will give them Heads in the succeeding Month, finer than those of the best Season.

When they are hoe'd, let a small strong Hoe be us'd to break the Surface to some Depth; and when the Weeds, cut up by this, are drawn off the Ground, let there come a good Watering.

The Turneps must be hoe'd in the same Manner; but the weeding of the Spinage will be best done by Hand, striking the Mould off from the Roots as they are pull'd up, and leaving all level about the young Plants.

This is a Season for sowing some *Dutch Lettuce*. Care must be taken of the Plants when they are up; and if a Frame be allow'd for a Parcel of the best of them, they will be sure to come in a good Season.

Celery planted out at its proper Season, will now be well rooted, and the Advantage of the Rains will send it up largely. Let it be earthed as it rises, and let this be done carefully. The Mould drawn up about it must be fine, and the earthing of it should be perform'd in a dry Day. Care must be taken to earth it high enough, else the Work will soon need to be repeated; but let the Gardener see the Heart of the Plants is not choak'd or cover'd, for this will rot them.

Much of the Kitchen-Garden Ground will now be clear'd of its Crops; and this the Gardener is

to consider as of two Kinds; some Parts of it must serve for receiving the transplanted Growths for Winter, and some must be reserv'd for the Spring sowing.

The compleat Gardener should have all this in his Eye at once; and making the proper Separation and Disposition now, he will find all his Work proceed with Regularity.

When he has mark'd out his clear Ground for these Purposes, let him set on his Men to digging. Most content themselves in the clearing off the Weeds, by Hoeing, from the whole Ground; and there are printed Authorities (such have the Writers on Gardening been) for this Conduct. Let our Pupil learn what is Tillage better.

How does Earth become exhausted, but by the nourishing of Plants? And how is it refresh'd and restor'd to its former Strength and Vigour, but by Manure and Tillage? Either will do; and, in some Cases, Tillage is best us'd singly: in others, both together.

As to the exhausting of the Earth, all Growth of Vegetables does that; Weeds as well as profitable Herbage; and with Regard to the restoring it to Vigour, where Manures are not employ'd, the Effect of Tillage in disposing it properly to receive the Rains and Dews, is the great Thing. These are the Principles of Garden Culture: let us apply them to Practice in this Instance.

Here are large Spaces of Ground exhausted by Summer Crops, and they are to be refresh'd for the succeeding Plantation. Weeds must not be permitted to grow upon them, for that would exhaust them farther. These the common Writers direct to be clear'd off; but here their Directions stop. Certainly this prevents the farther exhausting of the Ground, but more may be done. Even where no Manure is added, Tillage will come in very serviceably; therefore let all his Ground be dug, but in a different Manner.

Let the first Division, comprehending all that is to be us'd for the Autumnal Transplantation, be dug deep and well: let it be laid in Borders, or Beds, of proper Form; and thus broke by the Spade, let it lie expos'd to Dew and Rain to enrich it, till the Time of planting it. The Ground will be much fitter for that Service, and much improv'd by this Preparation.

With Respect to the other Part, which is to lie vacant till Spring, let it enjoy all the Advantages of Fallow. The Farmer may instruct the Gardener here in his own Profession. When he lays his Land fallow, he does not leave it in the Stubble: he knows Rest from Produce is but a Part of what is requir'd for its recruiting its Strength;

Sept. Strength; he plows it deep and well, and after some Months he repeats that Labour: thus the Mould is broken, the Air, Sun, Rains and Dews, Nature's own Manure, are admitted freely; the Clods are calcin'd by the Sun and Wind, mellow'd by the Dews, and dissolved by Rains. Thus the Land becomes improv'd not by meer Rest or Respite. The Spade is the Gardener's Plow, and it is a better Instrument: his Land needs Fallowing, and let him give it all the due Advantage.

Something like this is done in the Beds for Transplanting, according to our Directions here given, and there is not Time for more. The Soil is once exposed and broke in digging up the Border, and once again in the particular Spots that are used, in the Act of Planting. In that Part set aside for Spring, there is Opportunity for much more Advantage. Let it be dug deep, well broke with the Spade, and thrown up in high Ridges, East and West, that it may be open to the Rising and the Setting-Sun. Twice in the Winter let it be dug again, broke well a-fresh, and thrown up in the same Form and Manner. This will give it all the Advantage of a well-manag'd Fallow, and in the Spring it will be found very fruitful.

Much of the Dung used in Kitchen-Gardens may be sav'd this Way; and 'tis always to the Advantage of the Products to be sparing of it. The same Effect that takes by Fermentation, the Tillage we have directed supply by Calcination, and by the Impregnation of the Dews; and all the Products rais'd upon Ground, thus enrich'd by Tillage, will be finer flavour'd than those supply'd with Nourishment from Dung.

We direct this to be a Week of Preparation more than actual Service; and it will be found most adviseable to make this Use of it. We propose, in the next Number, to direct the principal Transplantations of the Kitchen-Garden, and this is needful as a Preparation for them.

The Time of making Mushroom-Beds is now approaching, and this should be prepar'd for in the same timely Manner. Let mellow Dung be ready for making the Beds, and the proper Matter got for planting of them. This is to be sought for in the Fields.

The Mushroom, long suppos'd to be produc'd from Dung of Animals, by an equivocal Generation, is now known to rise like all other Vegetables, from Seeds. It is one of the *CRYPTOGAMIA* of LINNÆUS: these compose his Twenty-fourth Class, the last of his Work; and the Term form'd, like all his others, of two *Greek* Words, signifies Plants, the Impregnation of whose Seeds is from the Smallness or Obscurity of the Parts, perform'd in a Manner not visible to our Eyes.

The Gardener should understand thus much of

Sept. Botany; for otherwise he cannot understand what this Matter, to be sought for the enriching of Mushroom-Beds, is; or how it should be most properly manag'd.

The Seeds of Mushrooms are impregnated by a fine Dust from certain Buttons, like the *Antheræ* of larger Flowers; and these, together with those *Antheræ*, are lodg'd within the Gills.

When a Mushroom stands to ripen fully, they drop out on the Ground: the Flap falls upon them, and preserves them from being scattered by the Winds: it also enriches the Soil, and promotes their shooting. This happens in Autumn in our rich Pastures; and, at other Seasons, on Mushroom-Beds already made, and fruitful.

The first Shoot from the Mushroom-Seed, is a slender Fibre, not to be perceiv'd but by powerful Microscopes; and this serves only to fix it in the Ground. Thus the Seeds lie till the same Period of the succeeding Year; they then shoot downwards; and getting about an Inch or an Inch and half under the Surface, form Clusters of little roundish Knobs. From these occasionally rise Mushrooms; and from the Bottoms of their Stalks again, there are produced more of these little Knobs.

These are what Gardeners call the *Spawn* of Mushrooms: they are the proper Matter for propagating of them on the Mushroom-Beds; and this is the right Time for seeking them.

The Mushrooms which grow wild in Fields, are vastly preferable to such as we have from Art: therefore let this *Spawn*, as it is call'd, be sought in the richest Pastures, where Mushrooms naturally grow; and not taken from the Beds of other Gardeners. It will be found, by opening the Ground, where Mushrooms rise plentifully; and it must be manag'd carefully.

The Gardener, when he goes out for it, should take his Spade for opening the Ground, and a broad Basket, covered at the Bottom with dry Moss.

He must take up the Lumps of Spawn as entire as possible, with their own Earth about them, and lay them carefully in the Basket: when he has as much as covers the Bottom, he must spread over them another Layer of Grass, or Moss, pretty thick, and then lay in more: thus let him proceed till he has enough for such a Bed as he intends to make.

When he has brought this home, let him take it out of the Basket as carefully as he put it in; and lay it Piece by Piece, with the Moss under it, upon a Table in an airy Room, where the Sun does not come.

This is the Preparation he is to make for the Mushroom Spawn; and we shall, next Week, tell him what to do with it: for it must be so long exposed to the Air before it can be planted.

E D E N:

A

COMPLEAT BODY OF GARDENING.

NUMBER III.

For the Second Week in *SEPTEMBER*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP I.

Curious Plants and Flowers now in their Perfection.

1. CANARY DRACOCEPHALUM, called CEDRONELLA.

Sept.
III.
§. 1.

THIS is a Plant of less Beauty than many others; but distinguished by its Fragrance, which is of a peculiar Kind, resembling the more delicate of the resinous Drugs.

The Vulgar have, for this Reason, called it the *Balm of Gilead* Plant; and some have thence been led to suppose the liquid Refin of that Name its Produce; but that is a great Error. The common Writers call it *Moldavica Melissa Canarina*, and by two peculiar Names, *Campborosma* and *Cedronella*: its proper Name is *Dracocephalum floribus spicatis foliis compositis*; Dragon's Head with spiked Flowers and composite Leaves.

It is an herbaceous Plant of two or three Feet high: the Stalk is square, tolerably firm, upright and branched. The Leaves are numerous, and grow with Regularity, three on each Footstalk toward the Top of the Plant; and sometimes five on those nearer the Bottom. They are oblong, serrated, sharp pointed, and of a pleasant green.

The Flowers stand in thick Tufts or short Spikes, terminating the main Stalk and all its

Numb. III.

Branches: they are small, and of a pale red, deeper above, and often whitish below. When these are fallen, four Seeds stand naked in the Bottom of each Cup; and from these the Plant is to be raised again.

The Flower examined closely is found to be formed of a single Leaf, tubular at the Bottom, and gaping with a Kind of Mouth. The upper Lip is arched and simple; the lower is divided into three Segments; and under the Cover of the upper Lip stand four Filaments.

Our Student has not yet met with any Plant with this Number; but he must not be hasty thence to refer it to the fourth Class.

The Number of these Filaments never distinguishes the Place of the Plant, but when they are simply disposed.

He will hereafter meet with Flowers in which there are four equal Threads; but in this it is otherwise: two he will see are longer than the others. The Difference is not much; but it is absolute and invariable. On this depends the finding to what Class the Plant belongs; for there is a peculiar one for all those, two of

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whose

Sept.

Sept. whose Filaments are longer than the others.

It is the fourteenth in the LINNÆAN System. The Name is *Didynamia*, a Term formed like the rest, of two Greek Words, and expressing Plants in whose Flower two Filaments have more Efficacy than the others.

This is a Native of the *Canaries*; but it is easily raised with us, and thrives as well as in its natural Climate.

It stands our Summer Nights, but must be defended by the Cover of a Greenhouse, when the Air is chiller.

The Culture of the CEDRONELLA.

The Seeds are to be sown early in Spring; or the Cuttings are to be planted in the Summer Months. This latter is the Method generally practised, and is directed by those who have written on these Subjects; but we write not from the vulgar Practice, or according to the vulgar Instructors, but from what we have seen.

Strong Plants may be raised from Cuttings; much handsomer from Seeds ripen'd here; and the finest of all from fresh Seed brought from the *Canaries*.

Its wild Growth there is by the Sides of Woods in light loose Earth; and this is what we should copy; therefore let the Gardener who would do himself Credit from the Superiority of his Plants to those of others, proceed thus.

In the second Week of *April* let him select his Spot, and prepare his artificial Soil. Let him chuse a Place under a south-west Wall, and not wholly without the Shade of Trees. Let it be defended against the cold Quarters; and upon this small Spot let him thus raise his Plants. To one Part of the common Mould, let him add two Parts of old rotted Wood from the Earth of a Stack Bottom.

When this is worked together, let him draw his little Drills, and sow the Seed in two or three Rows, covering it but Half an Inch: let him then scatter lightly a little Pease Haulm over the Place, and leave the Rest to Nature.

When the Plants begin to shoot, let the Haulm be taken off; and at Evening give carefully a very gentle Watering. Repeat this if

Sept. Showers fail, and let the Plants gain some Strength; then mark the strongest; and leave them at a Foot distance every Way, pulling up all between them.

From this Time keep the Border clear of Weeds, and now-and-then stir up the Surface with a Trowel: water the Plants in dry Weather, and they will grow fast.

In the last Week of *July* take up one Half of them. Prepare large Pots; fill them half up with the Earth of the Border: take up these Plants with as much Mould as can be made to hang about them, and place one in each Pot: fill up with Earth, and keep the Plants upright and steady.

Set these in a shady Place, and give them a little Water. Repeat this, and keep them in the same Place till they have taken Root; and after that set them where they may have good Sun.

These being taken care of, those left in their natural Bed are to have equal Regard. The Earth is to be levelled, and they are to be watered, after the taking up of the others; and this is to be repeated occasionally afterwards.

We have observed, that breaking the Earth while a Plant is growing, serves as Manure to it: this will be seen in the present Instance; for when Half the Plants are taken away, the rest having double Space and a fresh broken Earth, will shoot up surprisingly. They will have the Superiority over those in the Pots greatly, from their not having been removed; and many of them will flower that Year, about the Middle of *September*.

These Plants are to be left all Winter; and those in Pots are to be removed into the Greenhouse. This used to be the Custom with all, but we write from Trial: the Plants in the open Garden will live thro' a common Winter, and exceed vastly those in the Pots.

I have thus raised the *Cedronella* to five Foot Height, with perfect Strength and Vigour in every Part: its Leaves, when bruised, have perfumed a Room; and its Flowers have been finer by much than those raised in the common Method from Cuttings, and sheltered in the House.

2. The COTTON TREE.

Pl. III.
Fig. 2.

This is a Shrub distinguished by its Beauty, and worth the Regard of all who cultivate Exoticks. The common Writers call it *Xylon Gossypium*, and *Ceiba*: its proper Name is *Bombax foliis digitatis caule arboreo*: Shrubby Bombax with finger'd Leaves.

Its Height is five or six Feet, and it spreads naturally into many Branches, wildly but not unhandisomely. The Trunk is of a pale brown. The young Shoots glow with a Tinge of yellowish; and the Foot-stalks of the Leaves are not unfrequently reddish.

The Leaves are large and beautifully formed; each is divided to the Stalk, or nearly, into five Parts, which spread as the fingers of a Hand: their Colour is a very deep green on the upper Side, and paler underneath; and on the Stalk there are Prickles. The Flowers are very large and very beautiful; their Colour is a pale yellow, often tinged with Purple; and their Cups are a singular Beauty in the Plant; they are vast, rounded, ribbed and jagged. The Flowers do not terminate the Branches; but grow in great Number from the Sides of the Shoots. After these
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come

Sept. come the Seed Vessels, which are roundish but pointed, and contain each, in four Cells, many large Seeds, wrapped round in a snowy and soft Down, which is Cotton.

To know the Class to which this Plant belongs, the Student must inspect the Flower. He finds it placed in a double Cup, and formed of five large Petals, whose Bases are united. Opening these he sees numerous Filaments crowned with their Antheræ; and following their Course down with an observing Eye, he perceives they all unite and form a Kind of Tube.

We need not tell him to what Class the Plant belongs, for he has made himself acquainted already with the *Monadelphia* under two preceding Articles, the *Fig Hibiscus* and the *China Rose*; and we have told him all Plants whose Flowers have Threads so united into one Body, belong to the sixteenth, the Monadelphous Class: the Filaments being numerous, refer it also to the same Section with those; the third containing the *Polyandria*.

The Shrub is a Native of the *East* and *West-Indies*, and with us requires the Warmth of a Stove.

The Culture of the COTTON-TREE.

Procure Seeds from the Places where it is native, and give Instructions that they be gathered when fully ripe; and sent over the same Year.

Sow these early in Spring upon a common hot Bed, and they will shoot freely. When they have risen to a little Height, they must be potted, and afterwards removed into the Stove. The Method is this.

Let a Quantity of good Garden Mould be made very fine; and as many Pots set ready, as it is intended to raise Plants. Let each Pot be

filled half Way with the Mould; and then let the best and most promising of them be carefully taken up, and set in the Pots, one in each. Let more of the fine Mould be put in, and the young Plant secured upright, and well fixed. Then let them have a very gentle watering from a Pot with small Holes; and let them be set in a hot Bed with Tanners Bark.

Let them be kept here with Care, watering them at times, and giving them as much Air as they can bear; for the more Air they have, provided they are not checked by it; the stronger they will grow.

When they have got to some Height they must be removed into larger Pots; for in the small ones there will not be then Room for their Roots, nor Earth enough for their Nourishment. Still nothing is to be used for them but Garden Mould. These larger Pots must be half filled with this; and the Plants are to be removed into these, keeping a good deal of the Earth about them; and the Pots are then to be filled with more: they must thus be put into the Bark Bed again, and watered as Occasion requires.

As the Summer is by this Time advanced, the Air is fitter for the Plants; and they may be allowed a great deal of it, by often raising the Glasses.

Thus they are to be kept, till they are so tall as to reach the Glass of the hot Bed Frame. If they were kept the longer it would spoil their Form, but that is not needful; for they may now be taken to the Stove. They are there to be set in their Pots in the Bark Bed, and they will flower the succeeding Season, and continue several Years.

There must be Care to pick off the dead Leaves as any are seen; and in all other Respects they are to be treated in the same Manner as other Stove Plants.

3. EGG NIGHTSHADE, called the MAD-APPLE.

Pl. III. This Plant demands a Place among those of Curiosity, from the great Singularity of its Fruit, which is of the Bigness and Colour of an Egg. The common Writers call it *Melongena* and *Malva insana*, in *English*, MAD-APPLES; and it has been supposed, that being of the Nightshade Kind, thought in general poisonous, and characterised by so singular a Name, it had the Effect of causing Madness; but this is an Error; for the Fruit is perfectly innocent. It is eaten in many Parts of *Europe*, and the *East*; tho' we raise it only for Curiosity.

It is truly and properly of the Nightshade Kind, and its Name, according to LINNÆUS, is *Solanum caule inermi herbaceo foliis ovatis tomentosis integris, calycibus spinosis*: Weak herbaceous Nightshade, with oval, undivided, downy Leaves, and prickly Cups.

The Plant is two Foot and a half high, of an irregular Growth, and spreading: the Stem is round, thick and hairy; the Leaves are large, and

they stand upon long Foot-stalks; they are broad at the Base, smaller to the Point, and irregularly wav'd at their Edges: their Colour is a pale green, and they are hairy.

The Flowers are not of any great Beauty: they are moderately large, and of a dusky white, with more or less of Purple. The Fruit which follows these is of the Bigness of a Hen's Egg, white, soft and juicy.

To know to what Class this Plant is to be referred, the Student must examine the Flower more nearly. He will find it is placed in a Cup formed of a single Piece, divided into five Segments; which remains when it is fallen, and encloses the Base of the Fruit. The Body of the Flower is composed of a single Petal, divided deeply into five Segments, and tubular at the Bottom. In its Centre stand five Filaments of equal Length, and regularly disposed: they are short, but they have conspicuous oblong Antheræ or Buttons, which converge at the Points.

The

Sept. The Number and Disposition of these Filaments, shews the Class of the Plant to be the fifth of LINNÆUS, the *Pentandria*: and as the Style rises single among these Filaments, that shews it belongs to the first Section. The *Melongena*, or *Egg Nightshade*, is therefore one of the *Pentandria Monogynia* of LINNÆUS.

It is an Annual, and is to be raised from Seeds by the Assistance of hot Beds, in the Manner of other Plants of that Kind. It will require two hot Beds, and may, after that, be left to its Fortune in the natural Earth.

Let Seeds be saved from some large Fruit growing on a strong and vigorous Plant. Let these be carefully dried and preserved thro' Winter: and in the Middle of *March* let them be sown on a Hot Bed of a moderate Degree of Heat, covered with very rich common Mould.

When the Plants are up, the Gardener must prepare a second Hot Bed; which should have a Covering of Mould also five Inches deep.

As soon as they have three or four Leaves a-piece, let him transplant them into this second Hot Bed, making small Openings for them at five Inches Distance every Way, and setting them with the utmost Care.

Let them have a gentle watering as soon as they are planted, and keep them well shaded, till they have recovered the Check from removing, and look fresh again and lively: then his Care must be to give them as much Air as they can endure. He must not throw off the Cover of the Frames, nor raise them very high at improper Times; but in the Middle of the Day, and when the Air is warmest, he must raise up the Cover a little at a time, and thus prepare them as they gather Strength, and the Season grows warmer, to be fully exposed,

All this Time they must be watered occasionally; not largely, but frequently; and they will thus, by the latter End of *May*, grow too big to be longer confined in the Frame.

Then is the Time of planting them out; and here the Gardener has his Choice, to put them into Pots or open Borders. The most usual Method is to pot them, because they can so be removed when the Fruit is ripe, and set in conspicuous Places; but the best Method is to plant them in the natural Ground.

Sept. In Pots they have not Room to spread; and few know how far the Roots of Plants extend for Nourishment: neither have they in that Case the Benefit of Steams from the Earth, or other common Advantages of Nature.

From what we have seen from Experience, we advise the Gardener always to place some Plants in the natural Ground. If the Pleasure of the Proprietor requires that others be in Pots; it will be seen that there is a vast Difference in Favour of those raised Abroad. The Method must be this.

Let him chuse a warm and well exposed Spot of the Garden, sheltered from the cold Winds, while it is open to some Air and Dews; here let him dig the Earth a Spade and half deep, and work in a little very rotten Dung.

Let his Bed be prepared a Fortnight before it is wanted; and about the last Week in *May* let the Plants be removed into it. They must be carefully taken up from the hot Bed with as much Earth as will hang to their Roots, and placed at two Foot Distance every Way in the new Border, in Holes opened deep enough and large enough to receive them with their Roots and Earth.

Here they must be watered and shaded, till they have recovered the Check of their moving; and after that kept free from Weeds, and at times also watered.

When the Fruit appears they must be watered more plentifully; not with a Deluge at once, but by a moderate Quantity often repeated.

The Bigness of the Fruit is the Pride of the Gardener; and this depends greatly upon the due Degree and equal Quantity of Moisture.

I have brought the Fruit of this Plant to the Size of a Goose-Egg, only by a good Soil, proper Distance, and gentle watering three Times a Day, as it was growing to its Bigness.

It is not peculiar to this Species of *Nightshade* to have so large Fruit. The *Barbadoes* Batchelor's Pear is another Instance which we shall give in our next Number; and there are of this Kind, called *Melongena*, some Varieties: one with the Fruit of a fine Violet Colour. But the Beauty of this does not come up to the Singularity of the other, whose Resemblance of an Egg, from its white Hue, is very pleasing.

4. The GLORIOSA, called the SUPERB LILLY.

Pl. III. This is a Plant not only of extream Beauty, Fig. 4. but of a Singularity, which, had it less Elegance, could not fail to recommend it to the Notice of the Curious. It is an Unick among Vegetables, a Plant *sui generis*, and not to be referred to any other Kind.

Its most usual Name is the *Superb Lilly*: its Indian Name, *Mendoni*. COMMELIN gave it the Name, *Lilium Zeylanicum Superbum*, the Superb Ceylon Lilly. HERMAN calls it *Metbonica*; and

LINNÆUS, by a very proper and expressive Name, *Gloriosa*. No Terms of Distinction are added, because it stands single, and has no like Species from which to be distinguished.

It is a perennial rooted Plant, and where supported rises to eight Foot high, if Culture favour it. The Root is oblong, thick, flatted, and covered with a brown Bark, but white within. The Stalk is round, green, weak and branched.

The

Sept.

The Leaves are long, and of a moderate Breadth. They stand at Distances upon the Stalk; and from a broad Base grow smaller to the Point, where they become extremely slender, and curl in the Manner of Tendrils. They serve that Purpose also, laying hold of any Thing by which they can support the Stalks.

The Flowers are scattered over the whole Plant: some terminate the Branches, and others rise from the Bosoms of the Leaves on long slender Foot-stalks.

While in the Bud they droop, and have a singular and very beautiful Figure. They are of the Bigness of a small Pullet's Egg, and of its Shape; the large End growing to the Stalk. In this State their Colour is an elegant whitish; green tip'd at the Point with a most glowing Purple.

As they burst open they grow more erect, the Stalk is firmer, and not the Body of the Flower only, but its Filaments also turn upwards. When fully open it is of a vast Size, and the green of the Petals grows first gradually yellow to the most perfect gold Colour; and thence to a most elegant purple. Thus the several Flowers in their various States appear distinct, and diversify the Object in an extremely pleasing Manner.

The several Petals are of a singular Figure, long, narrow, and undulated at the Edges. The whole Flower, when the Plant is well managed, is often three Inches and a half in Length, and is second to none in Elegance or Singularity.

To know to what Class in the LINNÆAN System this strange Plant belongs, the Flower is to be examined in its internal Parts.

It grows to the Stalk without a Cup, and it is composed of six of these long, narrow, undulated and pointed Petals. These are turned up from the Base; and in their Centre rise six conspicuous Filaments, terminated by their Buttons, and surrounding a single Style.

The Student will not be at a Loss whither to refer this Plant: its Parts are so conspicuous, that none can serve better for explaining the Characters of the Class to which it belongs. This is the sixth of the LINNÆAN System: it is called *Hexandria*, a Term expressing Plants in whose Flower there are six male Parts. These are the six Threads; and as the Style is single, it naturally falls into the first Section of that Class.

Let the young Botanist impress this in his Memory: whenever he sees a Flower with six equal, separate Filaments, and a single Style, let him remember it belongs to the *Hexandria Monogynia*.

The Tulip is such another, and most of the Plants with bulbous Roots.

It is one of the Singularities of this noble Plant, that with these plain Characters of the bulbous Tribe, its Root is not of that Form.

This shews the Preference of the LINNÆAN to the common Systems in this Article. They arrange these Plants according to the round Form

N^o 3.

of their Roots; and they must therefore separate this Plant from them. Sept.

The new Method disposes them according to their Filaments, and joins this with them.

Nature wantons here in her Characters; and LINNÆUS is happy, that her Irregularities are in his Favour. Sometimes they perplex his Method; and too often give this Praise to others.

The Culture of the GLORIOSA.

The *Gloriosa* is a Native of Ceylon and Malabar, and therefore needs good Care to bring it with us to due Perfection.

Its Propagation must be by parting the Roots: and Time must be allowed them; for they must by Degrees be brought to Strength for flowering.

To know the proper Soil, the Gardener should be informed in what Kind it naturally grows: 'tis found in barren Deserts upon Sand; but it thrives best where there is some Richness also in the Ground, and where it has Support and Shelter. In Autumn after it has flowered, the Leaves grow yellow, and the Stalks decay: this is the Time for getting off the Sets.

Let the Mould be carefully opened about the Plant, and let them be taken off carefully without damaging the main Root. Let this be covered carefully up, and left to Nature; and let these Off-sets be planted thus: mix together equal Parts of light, rich Garden-Mould and Sand; prepare as many Pots as there are Off-sets, and let them be large ones; for the Plants are never to be removed out of them.

Let the Pots be filled two thirds with this artificial Soil, shaking it down, that it may gradually settle. Then place carefully in each one of the Off-sets, and cover it regularly two Inches deep.

Shake the Pots gently again, and set them, not in the Greenhouse, but under an east Wall. Here the Soil will be impregnated with the Rains, Dews and Sun; and if there should be a Defect of Showers, a little Water must be given them once in four or five Days.

When they have stood thus a Fortnight, remove them into the Stove, placing them where they may have as much Air as can be had in that Situation.

Here they must be watered now and then, and the Top of the Ground must be watched for their shooting.

About the Beginning of December the first Shoots will be seen above the Surface; and from this Time they may be watered somewhat more largely.

The Ground should be stirred at the Surface from time to time; and when they are grown to some Height, a Stick must be carefully thrust into the Mould, and they must be tied up to it.

After this let them have Warmth to promote their Growth, and Air, as it can be conveniently admitted, to give them Firmness and Strength.

The Spring after the planting of these Off-sets,

I

Sept. fets, let the Ground be carefully loosened all over the Surface, and remov'd almost down to where the Root lies; and when the Pot is thus far emptied, let the Earth near the Sides be cut and broken by Means of a long blunt Knife.

This done, sprinkle over it a little Water; then fill up the Pot somewhat higher than it was before, with the same Kind of Soil, and give another gentle watering.

Let this be repeated the following Autumn, and some of the strongest Plants will flower the next Year. With the same Care they will most of them flower afterwards; but commonly there are some that do not till the third Season. These are the weakest of the Off-fets, or some that have been ill-managed. In general, under the Hand of a skilful and careful Gardener, they will flower two Years after planting.

5. TUBEROUS BINDWEED, called the RED BATTATA.

Pl. III. This is a Plant cultivated with us only for Curiosity, but in many other Places for Use; the Root being esculent. 'Tis from the Colour of the Outside of this the Plant is called red, for the Flowers are usually blue: in this Respect of Colour, however, neither Root nor Flower are constant; the Plant varying according to the Soil and Situation, when wild, in both.

Its most common Name is the BATTATA. Some, after the *Spanish*, call it CAMOTES; and some, by its *Indian* Name, INHAME. It is properly of the Bind-weed Kind; and its distinct Name is, *Convolvulus foliis cordatis angulato nervosis caule repente tuberifero*. Bind-weed, with heart-fashion'd angulated Leaves, and creeping tuberiferous Stalks.

It is one of the most elegant of the Bind-weed Kind.

The Root is tuberous, thick, and red on the Outside, but white within. The Stalks are weak; and when they trail upon the Ground, there grow other such tuberous Lumps from them: but it is better they should be supported, otherwise the Plant grows dirty, and shews little of its Elegance. The Colour of the Stalk is purple: it is round, thick, and tough, and will climb to a vast Height, winding, like our Bind-weeds, upon any thing near it.

The Leaves stand singly on long Foot-stalks, and they are of a very elegant Form and Colour. They are broad at the Base; and are there heart-shap'd and angulated, or spread out into four or more sharp-pointed Segments; from thence the Body of the Leaf is continued smaller to a Point, and this Part is usually wav'd upon the Edges.

The Colour is a very fine deep green, and the Veins are purplish.

The Flowers grow in a scattered Manner all over the Plant; they are plac'd singly on long purple Foot-stalks, rising from the Bosoms of the Leaves; and they are large, and of a Bell-like Shape. Each is compos'd of a single Petal, and plac'd in a small Cup, divided into five Parts at the Edge. The Body of the Flower is form'd of a single Petal, which is narrow at the Bottom, and spreads to a great Breadth at the Top, where it is folded, and, as it were, wav'd at the Edge. Its Colour, when most perfect, is a celestial blue,

with an Eye of yellow: this Colour goes thro' the Petal in its lower or tubular Part, where it is throughout yellow. Sometimes 'tis altogether white, and sometimes reddish.

This is the general Structure of the Flower, which is followed by a large shelly Seed-vessel, defended by the remaining Cup. To know the Class to which the Plant belongs, its inner Parts must be examined. Tearing a Flower in two, down to the Base, the Student will perceive there stand in the tubular Part five short, separate, and regular Filaments; these shew him that the Plant is of the Fifth Class of LINNÆUS, nam'd from the five Male Parts PENTANDRIA. He will next see a single Style rise among these Threads; and this shews that the Section, to which it belongs, is the first, the MONOGYNIA.

All the Bind-weeds, and many other Plants, have the Male and Female Parts of the Flower thus disposed, and are of the same Class.

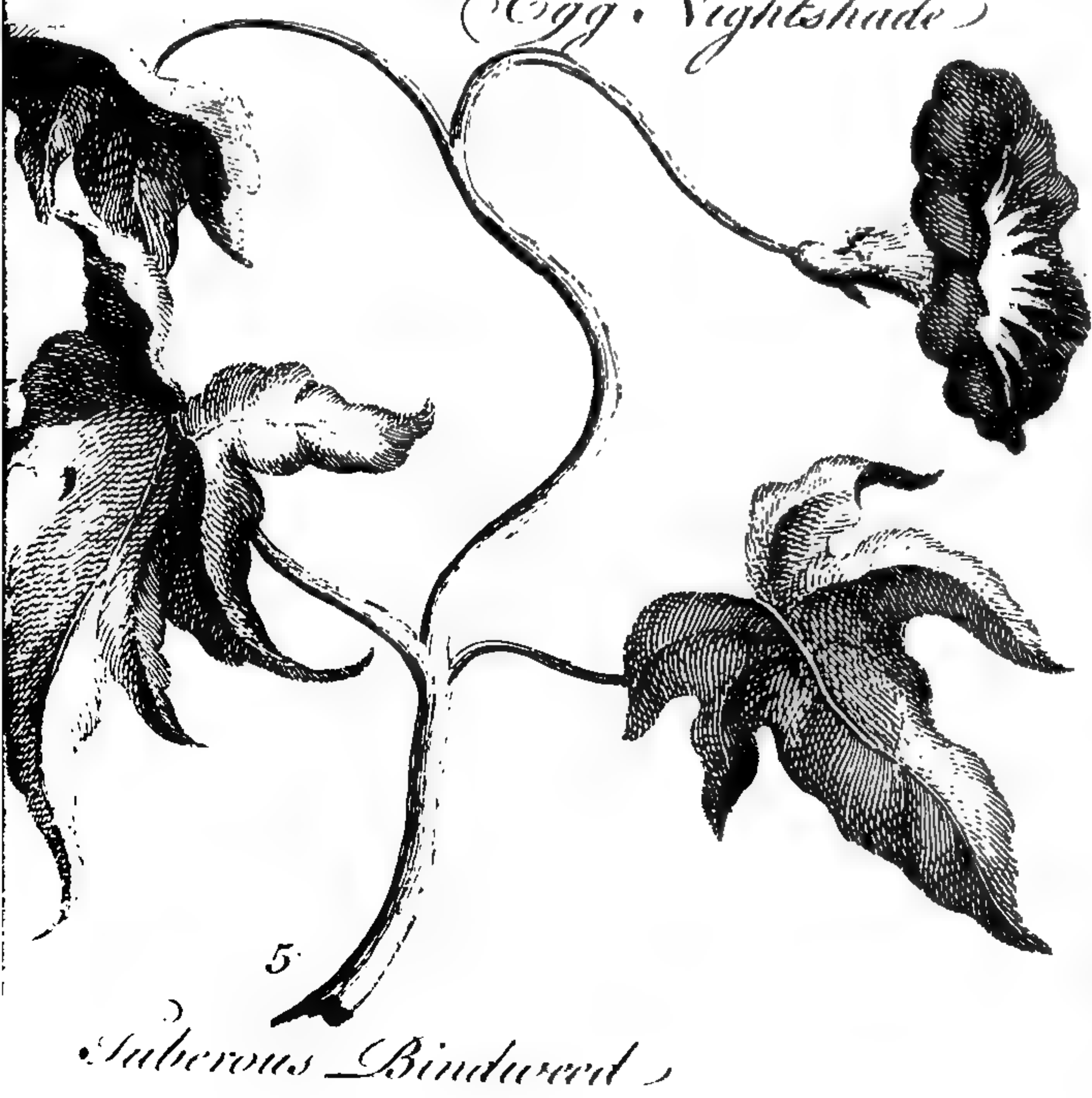
This is a Native of the *East* and *West-Indies*, and with us will require Heat and Shelter; but there is no Difficulty in raising it.

The first Care must be to get good and fresh Seeds.

The Culture of the TUBEROUS BINDWEED.

In *March* prepare a common Hot-Bed, and sow these; covering them an Inch deep with the Mould. When the Plants have three or four Leaves, prepare another Hot-Bed for them, and let them be carefully transplanted into it, and set at ten Inches Distance.

Here let them be watered often, but lightly each Time; and, as the Summer advances, give them more and more Air. When they have stood in this Bed a Month, prepare an artificial Soil of Garden-Mould and rotted Wood, and fill some Pots with it. Place in every one of these one Plant, and fix a Stick by it for climbing. Put some of these Pots into the Green-house, and some into the Stove, and treat them in each Place as the other Plants, according to the Season: the Green-house Plants will thrive best during Summer, and some will flower. The Flowers are lasting, and have a great deal of Beauty.



Sept.

6. BIXA, called ROUCOU and ORELLANA.

Sept.

Pl. III.
Fig. 6.

This Shrub stands recommended to the Curious, both by its Singularity and Beauty.

It is commonly called by a Name given more properly to its Fruit, *Roucou*. Authors in general name it *Urucu* and *Orleana*; or, as some write it, *Orellana*. BAUHINE calls it, *Arbor Mexicana castanea fructu coccifera*. LINNÆUS, *Bixa*. This Name was given it first by OVIDIUS; and there need no Terms of Distinction to be annexed to it, as we know no other Species.

The Shape and Size of the Fruit is often different, but that seems only accidental Variation; the Tree continuing the same.

With our best Care it will rise but to a moderate Shrub; but where it is native it grows much larger. The Stem is covered with a pale brown Bark; the upper Shoots are yellowish; and on the young Twigs there is often a light and elegant Tinge of Purple.

The Leaves are placed irregularly, and are in nothing conspicuous, except in their elegant and glossy green. They are broad at the Base, narrower to the Point, and wav'd along the Edges. They have moderate Foot-stalks, and their Ribs are large and yellow, or purplish.

The Flowers are large, and of a pale but elegant red, often diversified with Stains of white: they grow principally at the Extremes of the Branches, and have a Tuft of purple Buttons, supported by long Filaments, in the Centre.

The Fruit is large, and of an oval Shape. It is beset with Prickles, and it is full of Scarlet Seeds. It is surrounded at the Bottom by a small Cup, which is divided lightly into five Segments, and which before covered the Base of the Flower.

The Student, when he has observed the numerous Filaments in the Centre of this Flower, will recollect, that in order to distinguish between the two Genera, ICOSANDRIA and POLYANDRIA, both characterised by numerous Filaments, he is to trace them to their Origin, and observe whether they rise from the Inside of the Cup, or from the Receptacle: he will in this Flower find they rise from the Receptacle clear of the Cup: by this Disposition and their Number, he finds the Plant is one of the POLYANDRIA, the Thirteenth Class of LINNÆUS: and when he sees the Style rising singly among them, he will know it also belongs to the first Section, comprehending the MONOGYNIA, or such of the *polyandrous* Plants as have the female Part single.

Thus he will understand to what Class to refer the Plant; but there is something farther singular in the Flower: he will perceive that it resembles the five-petal'd Kinds; but usually he will find these Petals double. The BIXA may be said to have a double Flower: there are naturally five outer and five inner Petals: the outer ones are hard and thick, the inner thin and tender. In this, however, Nature wantons frequently: though commonly separate, these Petals sometimes grow together, or are but imperfectly parted; in which Case it resembles the common five-leav'd Flowers.

It is a Native of the hotter Parts of *America*; and is one of those Plants that with us require the Heat of the Stove.

The Culture of the BIXA.

The Seeds are easily obtained, and it may be rais'd from them without Difficulty. The first Care should be to have them fresh; for after two or three Years they will rarely shoot. When good, sound, and fresh Seed is got, let a Mixture of two Parts Garden-Mould, one Part Sand, and one Part rotted Wood, be prepared: and with this let a Couple of common Pots be two thirds filled. Let the Seeds be scattered upon the Surface, and covered an Inch deep, and let the Pot be set in a Tan-Bed.

The Plants will appear after some Time, and they must be refreshed with gentle Waterings, and allow'd a little Air.

When they have four or five Leaves a-piece, they must be transplanted each into a separate Pot of the same artificial Soil, and gently watered. These Pots should be placed in another Tan-Bed, with a deeper Frame; and as the Weather grows warmer, and the Plants stronger, they should have more Air.

The Waterings are to be repeated at Times, and the Air admitted carefully, till they have a good deal more Strength and Bigness: they are then to be removed into the Stove; and to take their Chance with the other Plants. They will not flower before the third Year: but they will be no unpleasing Sight; in the mean Time their Leaves and Shoots being of an elegant and pleasing Colour. Less Heat may keep the BIXA alive; but it will thus flower. COMMELIN is one of the many who raised it, but, for want of due Care, never saw its Flowers.

Sept.

C H A P. II.

Sept.

The Care and Management of the Flower-Garden, the second Week of September.

WE have mentioned in a preceding Number, the bringing some Flowers out of the Nursery into the Garden, and Preparation must now be made for all the others that are to be planted in Autumn. For this Purpose, let the Borders be examined as to the Condition of their Soil: some will be found exhausted; others only stiff for want of digging. Labour alone is required for these; but, for the others, Labour and Manure.

Let the first be work'd up thoroughly and carefully, and the others enriched by some Barrows of very rotten Dung, which must be well mix'd and wrought in with them. When these are dug and enrich'd, let them lie some Days: they will get great Advantage from the Sun, the Dews, and Rain; and their Plantation will be a kind of second Tillage. Gardeners do all together, and so they are directed; but it is like the rest of their common Practice, very ill manag'd: the Advantage of preparing the Ground a Week beforehand, is equal to that of a tolerable Manuring.

There is great Pleasure in seeing early Tulips, and the Gardener has a deal of Pride in their blowing well: Nature has also provided the Means of a long Succession, but they are not regarded.

The NONSUCH, and the WINTER DUKE, the FLAMBOYANT, and the FLORIZANTE; the EARLY PERFECT, the MORILLON, and the PRETTY BETTY; the APOLLO, the VICEROY, and the HARLEM JEWEL, with some others which we

shall name, when we treat of their Seasons of flowering, will come very early, if rightly managed. They should be put into the Ground this Week; and, if the Season favour them, they may be expected in all their Beauty at the End of March.

They are very handsome Flowers, and so different from the others, that they should, for that Reason, also be kept separate.

They are short in the Stalk, and therefore look irregularly among those of a later Season. They also flower at so different a Time, that it is very improper to mix them. One wishes to see a Bed of Tulips in their Glory all together; but these, as Matters are commonly manag'd, are decaying, when the rest are beginning to be in their Glory.

Let the same Care be taken for these fine Flowers that we have ordered for the Perennial Plants. Let the Borders be dug up and prepar'd for them, that they may lie a Week before the Roots are planted; and in some that were dug a Week ago, it will now be Time to plant early Anemonies. They must not be the finest Kinds, for those should not be exposed to so much Danger; but some of the others: in Places where they are well shelter'd, will have a Chance of coming at a very early Time.

Lastly, look over the Box-Edgings; repair where they are faulty; take up and replant them when they are grown too large; and thus close, in this Part, the Business of the present Week.



SECTION II.

Of the Business of the SEMINARY, for the second Week in September.

WE have observed, that Plants and Trees will require to be remov'd, not only from the Seminary into their Places in the Garden, but into different Quarters there, as they encrease in Size, and crowd upon one another.

The common Custom is, to set about this at a certain Time, and go through all the Business at once: but this also is wrong. The Season for transplanting with least Danger or least Damage, is just when the Leaves are decay'd. This happens on some Plants sooner, and on others later; it is therefore extremely wrong to remove all at once. Let the Labour be divided by the careful Gardener; and the several Kinds, according to their Nature, remov'd, as the true Notice of

the proper Period, the Fall of their Leaves, directs.

Let a large Hole be open'd for receiving each Tree that is transplanted, and let the Earth be very well broke in it: this might seem a needless Caution, because it is so universally known to be right and proper; but it is one of many Instances, that what is very well known, is ill practised. There is nothing in which so much Neglect is shewn, and there is nothing so destructive. Half the Trees that fail in a Seminary, as well as afterwards, on the Removal to their Places in the Garden, are lost by this Carelessness, of not making the Hole large enough, and not breaking the Earth fine.

Sept.

SECTION III.

Sept.

POMONA, or the FRUIT-GARDEN.

CHAP. I.

Fruits now in Perfection.

THE principal Fruits come to Ripeness since our last, are these: 1. The CHANCELLOR'S PEACH: this is an excellent kind; it is moderately large, covered with a thick Down, red all over, except near the Wall, where it is whitish; and full of a rich melting Juice. The Pulp is yellowish, and it is red near the Stone.

2. The TETON DE VENUS. This is a round handsome Peach, with a large Cleft on the Side; sometimes it is a little longish, but this makes no Difference in the Kind: it is of a pale whitish green Colour; only on the Part most exposed to the Sun, there is a little red. The Pulp is white, and the Juice is rich and excellent.

3. The ITALIAN PEACH. This is of a longish Shape, and of a yellowish Hue, next the Wall, and a deep purple on the sunny Side; it is of a middling Size, and very well tasted; and it is red near the Stone. It requires that the Gardener

understand his Business to get these ripe; but, with due Knowledge, this is their proper Season.

Of the Plumb Kind, 1. The MAITRE CLAUDE ripens now: it is a round green Plumb, pretty large, and it much resembles the green Gage. It is a little small at the upper End, and has a Furrow on one Side, and the Stalk is short. It is full of a rich and pleasant Juice.

2. The MANGERON is also now coming in. It is a round Plumb, of a middle Size, and is dusted over with a fine blue Powder. It is not very juicy, but is of a fine Flavour; and it is valued because the Pulp parts freely from the Stone.

The ROBIN PEAR ripens now, and is greatly esteem'd for its musky Flavour. It is thence call'd also the MUSCAT, or MUSK ROBERT, and the French King's favourite Pear. It is roundish, but small toward the Stalk, and full at the Eye. It is a very excellent Pear when just ripened.



CHAP. II.

Of the Care and Management of Fruit-Trees.

THIS is the Time of reaping the Advantages of a Year's Care and Trouble; but without a very watchful Eye, the Gardener will have labour'd to feed Insects, not to supply the Table. We have already spoke of some of the larger kind of Devourers. But the Wall-Fruit at this Time, especially such as grows against old Walls, is vastly liable to a small but numerous Enemy, the Ant. This little Creature lives in the Earth of ill-manag'd Borders, and lurks in the Cracks of Walls, where the Mortar has fallen out, and in old Nail-holes. The Gardener should observe which is the Case, in the present Instance, whether they come up from the Ground, or live in the Cracks and Crevices of the Wall. If they come up from the Ground, let him open a little Trench with a Hoe just under the Wall, and pour into it a Mixture of Brine and Soot.

This is very hateful to the Ant, and will be far from damaging the Tree; for it will serve as a Manure to improve its Vigour.

Let him in the other Case make a good Quantity of the same Mixture, and taking it in a Pan with a Painter's Brush in his Hand, let him go over the whole Length of the Walls, observing where they lodge, and dashing in a good deal of the Mixture in some Places, and

rubbing it on with the Brush in others.

Let him look well for every Crack and Hole, and in this Manner he will destroy a good Number of them, and dislodge many more, who will forsake a Place so disagreeable, and never return.

As he goes along, let him here and there pull off a decay'd Peach or Nectarine that is half eaten, and lay it carefully upon some of the Branches.

The Ants will gather to these rather than the entire Fruit which is growing; and two or three Times a Day these Fruits may be taken off full of them, and thrown into a Pan of Water. The Ants will immediately get off, and the Fruit may be laid on for more, these being left to drown.

This is the best Method the Gardener can follow, who has the Care of an old ill-managed Wall; but we shall in the succeeding Numbers inform him how to prevent the Evil.

The Holes are to be stopped by new pointing the whole Wall, and the Borders are to be dressed with a peculiar Kind of Manure.

These Things we shall direct more particularly when we come to the Months they concern; and by this Means the Fruit will be perfectly secured from such Devourers.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

As the Products named in our last continue good now, and there are no new ones which require immediate Notice; we shall devote the succeeding Pages to the useful Labours in the Ground.

FROM the Fruit let the Gardener turn his Thoughts to the Kitchen Quarter, and there continue and repeat his Labour.

We shall occasionally direct him what to sow and plant every Week in the Year; and we suppose him to have the Care of a Garden at this Time, planted and sown according to the common Methods.

If there have been tolerable Management, there have been sown about the Middle of *August* Onions, Cabbages, Coleworts and Carrots.

These will be appearing now, and great Care must be taken to destroy the Weeds that will rise with them.

Nature follows the Gardener's Hand in every Step; and sows Weeds wherever he puts in the Seeds of his Crops.

These grow faster than the useful Herbage; and they must be pulled up, or they will rob it of its Nourishment, and choak every Plant.

While this Care is taking of the Crop already sown, Attention must be had to the succeeding Sowings; and Care must be employed in saving the Seeds for them.

These ripen every Day in *September* upon several Kinds of Plants, and the Gardener should watch them.

He should gather them successively as they are fit, and spread them in an airy shady Place.

There they are to lie till perfectly dry in the Husks; and then they are to be separated and cleared from them; spread out a Day or two more to harden, and then put up to be ready for Use.

Most Gardeners hurry this Business up together; but Nature should be watched, her Times of ripening observed, and something done every Day, not every thing together.

This Method as it is best, is also easiest; it divides the Work, and makes every Part go off more pleasantly.

The Cauliflowers of different Growth must at this Time employ the Gardener's Attention in a various Manner.

Those which are forming for a late Crop will be in Need of Water; and on the contrary there is nothing from which the young Plants meant for the coming Season will suffer so much Damage.

This is a Time at which the Rains are chilly: the Effect they take is rotting the Stems of these tender Plants; and that is an Injury they never recover. These must be sheltered therefore from those Showers, which will be so beneficial to the others.

Brocoli is another of those Products which require at this Time a particular Care.

The first Frosts are to be expected soon, and it is therefore a Season for the latest Transplantation.

It will be proper to plant a small Parcel now; for that will have the Chance of rooting before the Frosts hinder; and it will, by this Means, come in a very acceptable Season.

We advised the Gardener in our last Number to gather his Spawn, as it is called, of Mushrooms, in order to make a Bed for them; and we suppose it laid according to the Directions then given to prepare it for planting.

Toward the End of this Week let him make the Bed; for about ten Days is the Time that the Spawn should lie before it is put in.

He sees that Mushrooms grow in common Pasture-Ground; but he is not for this Reason to plant them in common Earth.

Where there has been most Dung, they come up in general most plentifully; therefore it is plain he may promote their Growth by that Means.

Nature shews him in the Fields, that Dung which has been some time past its great Heat, is in the best Condition to promote their Growth; and let him follow her Steps also in this.

Upon these Principles, and with this Care, he may plant his Spawn with a Certainty of Success.

Let him chuse out some rich Dung that has lain together about three Weeks, and is mellowed, and grown cool from its first violent Fermentation.

Dig a Trench a Yard wide and four Yards long for the Dung; or if a large Quantity of Mushrooms are intended to be raised, let there be three or four of these Trenches dug parallel one with another. In this Case they generally succeed better than when only one is made, because they shelter each other; and the Seeds from the Mushrooms that ripen on one, are carried by the Wind to another.

Pile up in each Trench a good Quantity of the Dung; lay the Surface very even, and cover it half a Foot thick with fine fresh Mould, taken from under the Turf in the same Places where the Spawn was gathered.

The common Practice of our Gardeners is to make this first Bed of Dung, about twelve Inches thick; and in this they follow the Directions given them by the common Writers; but it is wrong: the first Bed should not be less than two Foot in Thickness; for otherwise the Moisture and gentle Warmth, which are what the Gardener depends upon, are not sufficient to give

Sept. give the first Swelling to the Spawn; and often three fourths of it perish.

When the first Bed of Dung is thus laid, and the Earth is spread over it, let the Gardener go round with a Parcel of his Spawn carefully preserved with the Earth about it, and lay in a Piece of Spawn with its Earth near the Edge at every ten Inches. Over these let there be spread a fresh Covering of Earth three Inches thick, and upon that is to be laid another Bed of Dung: this must be a Foot thick; and it must be drawn in a little every Way, that it may not over-hang and smother the Mushrooms.

Upon this Bed of Dung lay another Parcel of the same Mould five Inches thick, and lay upon this some more Knobs of the Spawn at equal Distances between each of the lower Parcels. Put no Mould over these; but lay on some more Dung about eight Inches thick.

Then lay on two more Beds of Dung and Mould as the last, placing some Spawn upon the Mould, at Distances all the Way, and working up the whole, like the Ridge of a House, to a Kind of Edge.

When the Bed is thus finished, go over it carefully with a very little Water. This is a nice Article, and the Success of the Plantation in a great measure depends upon it.

The Intent of the Bed is, that it shall get into a slow and gentle Fermentation; and a little Wet promotes this, but too much utterly prevents it.

A three Gallon watering Pot is enough for a twelve Foot Bed.

Let this be given lightly and regularly to every Part; and then cover the whole a Foot thick with dry Litter.

Leave the Bed thus to Nature; the Principle of Vegetation is strong in the Spawn, and there requires only a due Proportion of Warmth, and a moist Vapour to set it in Action.

This will be supplied by the Dung, and will make its Way gradually and equally among the Mould; till the Spawn will swell, just as it would do under the most favourable natural Circumstances.

The common Practice allows much less Earth than is here directed; but Experience has shewn, that the Heat and Moisture of the Dung will in this Manner very well penetrate thus much of the Mould; and that being allowed, the more Earth there is for their Growth, the better they will be; for though Dung be very assistant in promoting the Rise of Mushrooms, it is not their proper Soil.

Every one knows the Difference between Mushrooms from the Bed, and those from the Field; but the inferior Quality of the Bed Mushrooms is owing to the small Allowance of Earth, and to the Gardeners not understanding that Dung is not their proper Nourishment.

They have Mushrooms quicker from the using a smaller Quantity of Mould; but they are finer where there is more; and the Beds last longer.

This is seen by the Course of Nature in producing the Mushrooms in this Bed, made as we have directed.

There appear some upon the upper Part Sept. of it, where the Dung in a Manner touches the Spawn, some Days before there are any seen on the lower, where they are well covered with Mould; but then these first Mushrooms on the upper Part are brown and rough; whereas those which come a little after on the lower Part, are white, smooth and fatty on the Surface, and have the true wild Sweetness in their Flavour.

In about a Week there will be some Mushrooms seen; and when there is the first Appearance of any, there will soon be more: the Bed must be searched, and they must be gathered as they ripen.

It is best in this young Condition of the Bed, not to let any of the Mushrooms which rise grow large; for that exhausts the Spawn. It is an universal Observation, that the more regularly they are pulled, the more of them appear.

The Bed thus made will continue good a considerable Time, and will yield Mushrooms at Seasons when they are not to be had from the Fields; but the greatest Abundance from the Beds is always at the natural Season in the Fields, that is, in Autumn.

Two Things are most apt to be prejudicial to a new-made Mushroom Bed; the Cold and Wet of the Beginning of Winter; and the breeding of Worms.

The Care to be used against the first is very natural; for there must be more Litter spread over them. This keeps in their own Heat, and defends them from the heaviest Rains, by the Assistance of their own Shape, when made as we have directed; for the Wet runs off, and does not soak in when any get through the Covering of Litter.

The Worms that infest a Mushroom-Bed are small and white: they are of the Maggot Kind, and are produced in the same Manner.

I have known Millions in some small Spots, where they have devoured all the Rudiments or Spawn.

The Mushroom when it grows large smells strongly, like Flesh. This induces the Flies of several Kinds to blow it.

They lay their Eggs there, and soon hatch into Maggots, or the small white Worms.

Warmth and Moisture are what they require for their Support, together with their Food; and here they have all in Abundance; they thrive therefore, and they devour at a vast Rate.

The Place where these Flies lay their Eggs, is just at the Bottom of the Stalk, and their Time of doing it, is when they are grown large and swell.

This, beside the exhausting the Strength of the Bed, is a great Reason why the Mushrooms should never be suffered to remain on it till grown very large.

The common Practice directs the pulling them sooner; and the common Doctrine is, that when they stand to decay upon the Bed, they rot it.

This is not the Reason of the Damage which follows the leaving Mushrooms to take their full Growth, and to decay upon the Bed.

They in that Case sow themselves, and produce many

Sept. many young ones in irregular Places; as upon the Ground, and on the dungy Part of the Sides, where they are ill rooted; but while there is this slight Advantage of a few ill supported single Mushrooms from this, the great Resource of Spawn, which had been encreasing in the Earth a Year when it was taken up, are eat to Pieces by the Worms bred from the Eggs of Flies in the old Stalks.

This shews the Necessity of gathering Mushrooms from the Bed before they are too large; and there is yet another Caution to be observed, which is, that they be taken up entire.

Some careless Gardeners break off the Stalk at the Ground, and others I have known so over careful, that they have cut them. Both are very wrong; for in either Case there is left the Stump of a Stem, which the Flies will blow as readily as the entire Mushroom; and their young have thus less Way to eat down to the Spawn, than where the Mushroom is left whole.

The right Method is to draw them out with a gentle Twist.

Some pull them up strait; but this breaks that Part of the Bed on its Surface, and there often comes away some of the Spawn with the Stem.

The gathering one Mushroom thus carelessly, will be the destroying of fifty.

When they are gathered by twisting, they generally come up entire and clean: and if any of the Spawn happens to come out this Way with the Stalk, it must be carefully taken off, and put into some other Part of the Mould.

Heat and Moisture are the two great Requisites for making the Spawn grow; for without these Assistances it will lie unactive: but when it has once been brought to shoot in one of these Beds, the great Care of the Gardener is over; for he will never afterwards, unless by very bad Management, want a Supply.

These Beds will afford more and more Spawn, provided they are preserved from Worms; and when one of them has lasted several Months, and will yield no more Mushrooms, it is carefully to be taken down, and the Mould searched for Spawn.

It will be found that it is not Want of this which has occasioned the Barrenness of the Bed, for there will be much more than was at first put in; the Want of a due Heat and Moisture has been the Occasion.

This therefore is to be taken for the planting in other Beds; and what is not used at this Time may be preserved till it is wanted.

The Spawn of Mushrooms will keep, like the Roots of bulbous and tuberous Plants, a long Time out of the Ground, four or five Months if necessary; and will always be ready to grow, if thus planted with due Care.

The *French* raise Mushrooms without Spawn; at least they are not very nice in searching for it.

They pile up a Heap of Dung, and lay some fresh Mould taken from under the Turf upon it.

This they cover with fresh Litter, and water

once in three Days; and they seldom fail of having Mushrooms. Sept.

I have seen the same Practice in *England*; and sometimes it has been successful, sometimes not: but it has never succeeded so well as in the regular Plantation.

The *French* complain of their Beds soon spoiling; and their Destruction is always owing to Worms.

This proceeds from one Cause in all Places; and would easily be prevented by observing our Directions.

They always cut their Mushrooms, instead of pulling them up; and by that Means they invite the Flies and Beetles to blow the Stumps.

A Bed seldom lasts there more than three Weeks; and it is owing to this Cause.

We shall close this Account of the Mushroom Beds, with a Method by which they may be raised in greater Abundance than any other Way; but they will be inferior in their Flavour.

Mix together equal Parts of fresh Dung, old rotted Thatch, and of chopped Boughs of white Poplar. Lay this in a Bed two Foot thick; lay some Earth upon it; put in some Spawn of Mushrooms, and cover it with a little more of the same Mixture; throw over all a good Quantity of Litter, and moisten the Bed carefully every Morning.

The Caution is to keep it damp, and yet not drown it.

There is a peculiar Fermentation excited in this Mixture, which vastly promotes the Growth of Mushrooms; but they are not so pure or delicate as otherwise.

The finest of all Mushrooms are those in the Fields; the next to those are such as are raised on regular Beds, as we have described; and the worst are these.

The last Method is also very precarious: if it be rightly managed, the Produce for two or three Weeks is surprisingly great; but if too much or too little wetted, it yields none.

The Practice we have directed of taking up the Mould for the Bed from the very Places where the Spawn is gathered, is a Thing not known to Gardeners, but it is a vast Improvement.

There is by this Method a Certainty of having such Earth as the Mushrooms like to grow in; and probably there are Millions of little Particles of the Spawn taken up among it, which, though not perceptible to the Eye at the Time, soon swell, and grow under the Advantage they have of Heat and Moisture.

We attribute it partly to this Choice of the Earth, and partly to the allowing more of it than others, that the Mushroom Beds made under our Direction have succeeded particularly well.

This is certain, that their Produce has been always much greater, and often double that of such neighbouring Gardeners as have been very able to understand the common Instructions given for this Purpose, and very punctual in following them.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER IV.

For the Middle of *SEPTEMBER*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Curious Plants and Flowers now in their Perfection.

I. *The true ACANTHUS.*

Sept.
Pl. IV.
Fig. 1.

THIS Plant demands the Attention of the Curious, for a singular Reason, not for the Beauty of its Flowers (tho' the whole Arrangement of them is not unhandsome) but for its Leaf.

This has been celebrated for the Gracefulness of its Form in all antient Time; and gave a Grecian Sculptor the Idea of that elegant Part of regular Architecture, the Capital of the *Corinthian* Order.

Its vulgar Name is BEARS-BREECH. Authors, in general, call it *ACANTHUS*, *Acanthus mollis*, and *Acanthus Virgilii*; some *Branca Ursina*; but that Name is less known: its proper Title is, *Acanthus foliis sinuosis inermibus*; by which it is distinguish'd from all other Species.

It is a wild Plant of *Greece* and *Italy*, and will grow freely in good Soils with us; without any particular Care or Culture.

The Root is thick and full of Fibres. The Stalk is fleshy, round, purplish or pale green, not much branched, and about a Yard high. The Leaves are long, and moderately broad; their Colour is a fresh and lively green, with paler Ribs; and they are wav'd and indented at the Edges in a regular Manner, and with unequal'd Beauty. The Flowers adorn the Top a Foot in Length, clustering along the Stalk in a thick Spike. Singly they are small: they are plac'd in a kind of triple Cup, and are succeeded by a dry Capsule.

To know the Class, the Flower is to be examined strictly; and we are to caution the Student that he be not rash in determining concerning it. He will first find the Appearance of a Class he knows very well; but better Examination will shew him, that it belongs to one with which he is not yet sufficiently acquainted. First, let him observe the Flower, whose Structure is very singular. It is of the labiated Kind, or those which open with a Mouth, but it wants the upper Lip. It is form'd of a single Petal, tubular at the Base, with a kind of Beard, which closes the Hollow: the lower Lip is very broad, and divided deeply. This Structure of the Flower abundantly distinguishes it from all the Plants of the same Class: and in the internal Parts is to be found the Character.

We must remind the Student now of what we have told him before. That the Number of Filaments in a Flower, never is the Mark of a Class thence named, unless they are equal in Length and Disposition. On inspecting the inner Part of this, he will find four Filaments. He would be right in referring the Plant to the *TETRANDRIA*, if these were equal; but, on a nice Inspection, he will perceive that two are longer than the others: this shews it to belong to the *DI-DYNAMIA*; those in whose Flowers there are two Filaments longer than the rest, and therefore understood to be more efficacious, that being the Sense of the Term.

This Class is divided into two Sections; and the Distinctions of these are not founded, as usual, upon

Sept.

Sept. upon the Form of the Style, or Female Part, but on a more essential Character: the first Section comprehends those Plants which have this Kind of Flower followed by naked Seeds; and the other, those which have the Seeds in Capsules. We have observed, that the Seeds of ACANTHUS are lodg'd in a Capsule: it is therefore one of the second Section of LINNÆUS's fourteenth Class, the ANGIOSPERMIA.

The Culture of the ACANTHUS.

This is very easy. Its Root encreases fast, and its Seeds ripen freely. It may be propagated by taking an Off-set from an old Root, and planting it in *March*: but the best Way is to raise it from the Seed; this should be gathered when full ripe, in Autumn, and kept till the succeeding Spring.

A great deal depends upon a proper Soil, and due Condition of the Ground; and to this it is owing, that though the ACANTHUS is common in the Gardens of the Curious, we seldom see it in its full Beauty.

There are Books extant, which tell the Gardener in what kind of Soil Plants grow in their natural Wildness: to these he should have referr'd for that Knowledge; those who call themselves his Instructors, being usually deficient. We shall, in this Work, save him the Trouble of such Reference, intending it shall serve him as a kind of Library.

In *Italy* the ACANTHUS flourishes in a deep Soil, where there is Water near, and where it is not quite destitute of Shade. This let him imitate so far as Circumstances permit. Let him chuse for his ACANTHUS the dampest Part of his Garden: let him dig the Mould deep, and in the first Week of *March* sow the Seeds; they are best dropp'd at Distances into shallow Drills, and covered three quarters of an Inch with Mould.

Sept. Here they will shoot up freely; and, when risen, the strongest Plants should be mark'd, and the rest pull'd up, that these may stand at a Yard Distance. They will spread out their beautiful Leaves into circular Clusters, and will flower late at Autumn.

The Antients tell us how CALLIMACHUS saw, where a Basket covered with a Tile had been set upon a Root of this Plant, and the Leaves had shot up, and Stalks with them; which rising to the Tile, there became stop'd, and turn'd themselves spirally under it. What the Sculptor saw in Nature, he transfer'd to the Decoration of his Science.

Thus far the Architects relate the Story; and they are right to stop, for they must blush if they pursue it farther. — Who put instead of the Acanthus-Leaf, the Triple-Laurel, or the more divided Olive? Certainly not CALLIMACHUS.

These broader Leaves of Laurel, or narrower ones of Olive, they stick by Three's or Five's upon the Edges of the right Acanthus, and make the Leaf a Monster.

Who cut off the Corners of the *Corinthian Abacus*? Not CALLIMACHUS; for he found Points upon the original Tile, and he shew'd the Beauty and the Spirit of their Sharpness!

We wonder when we see *Corinthian* Capitals, and, among them, those wrought by the divine PALLADIO's Hand, at *Vicenza*, to see a Leaf so unlike what the Story tells, and what the true Taste of the Antients so universally admir'd: but these are the wild Liberties of Fancy. Happily there yet remains among the Ruins of one of VESTA's Temples, a Capital of this Order, cut according to the original Invention; its Corners entire, and the true Acanthus-Leaf for its Ornament: it remains to shame the others.

2. RED PLUMERIA.

Pl. IV. We gave last a Plant that bears our natural
Fig. 2. Climate: and, with the common Advantages of weeding and watering, will thrive in it as in its own. We here bring the Reader acquainted with one that will require more Care and Culture; but whose Beauty and Fragrance very amply repay the Labour.

Its *English* Name is RED PLUMERIA. PLUKENET has called it, *Clematis arborea*. Merian *Jasminum Indicum*: and our SLOANE, the great Founder of the BRITISH MUSEUM, *Nerium arboreum folio maximo obtusiore flore incarnato*. There are some Particularities in which it differs from all these Genera, and it has thence been distinguished by a peculiar Name, PLUMERIA; so called from PLUMIERE, a *Frenchman*, to whom Botany has great Obligations. LINNÆUS adds, by way of Distinction, the Form of its Leaves, and TOURNEFORT the Fragrance and Colour of its Flower. The first calls it, *Plumeria foliis ovato-oblongis*; *Plumeria*, with Leaves of an oblong oval Form: the other, *Plumerio flore roseo odoratissimo*.

Let not the *English* Reader be offended to see this Native of our Colonies named after a *Frenchman*: Science knows no Distinction of Country; and PLUMIERE deserv'd the Honour. He will have Cause to blush, when he is oblig'd to call some other new-known Genus by the Name of some mean, perhaps, or ignorant Person; but so far has Partiality led those, whose Genius and Knowledge rais'd them to the Rank of telling the World what they should call some of the most distinguish'd Beauties of Nature.

Our Buildings, to which this elegant Species must be confin'd, will not allow it more than the Condition of a Shrub; but in *Jamaica* it rises to a Tree; yet it will, in the lower Condition, flower in full Profusion.

The Trunk is brown, the upper Branches are green, and the Twigs often purplish. The Leaves are very large, and of the Shape of those of Laurel, oblong, broad, and pointed at the End. The Flowers are very large, and they spread out from the Tops of the Branches in numerous Clusters. Their Colour is a very beautiful

Sept. tiful red, and they have a Fragrance superior to almost any other Flower.

Each has a small green Cup; and is itself compos'd of a single Petal, tho' so divided at the Opening, that it appears form'd of five large ones, of an oval Figure. Its lower Part is a long and slender Tube. When the Flowers fall, there appear a kind of double Pods succeeding each, and full of large imbricated Seeds.

To know to what Class it belongs, the Student must tear down the tubular Part of the Flower. He will in this find five Filaments growing from about its Middle: these are equal in Length, and regular in Disposition; therefore the Class is to be determined from their Number; and the Student finds it is the Fifth of the LINNÆAN System, distinguished by the Name PENTANDRIA. In the Centre of these rises the Female Part, which is single, but terminated by two little Coronets. The Singleness of the lower Part, has occasioned LINNÆUS to place it among the MONOGYNIA: it is therefore one of the first Section of this fifth Class.

The Culture of the PLUMERIA.

Its Culture must be this: Let the first Care be to obtain from *Jamaica*, where it is native, some good Seeds, gather'd when full ripe, and of the last Year's Growth.

Let a Mixture of equal Parts, fine Garden-Mould, and the rotten Matter from the Bottom

of a Wood-Pile, be carefully made, and with that fill a couple of middle-siz'd Pots. In each of these sow about twenty of the Seeds, covering them with half an Inch of the same Earth; give them a gentle Watering, and place the Pots in a Bark Bed. Leave all to Nature, and the Seeds will shoot.

Let the young Plants be thin'd, till only three remain in each Pot, and let them be refresh'd occasionally with Air and Water, as they require one, and will bear the other.

When they are of some Weeks Growth, take up two out of each Pot, leaving only the strongest Plant. Set these carefully in other Pots, and then give all of them the same Care and Management.

After this, let one of the principal Pots be remov'd into the Greenhouse, and the other into the Stove, and let them be manag'd there as the other Plants. Let their dead Leaves be pull'd off as they appear. Let them stand free from other Things; that they may not be drawn up weak, by means of their Shade; and let them be water'd as they require it.

This Method, which we direct for many other Plants, will shew in what Situation they thrive best, and flower fairest; what Degree of Heat each absolutely requires, and what Cold it will bear, without perishing: this is an important Point, and can be determined only by Experience.

3. PEAR-FRUITED SOLANUM.

Pl. IV.
Fig. 3.

This is a Plant whose extreme Singularity entitles it to the Notice of all who delight in these Things; and which is never pass'd over without Notice by the most incurious Observer. Its vulgar Name is the *Barbadoes Batchelor's Pear*: some, from its Fruit having the Shape of a Breast with its Nipple, have called it *Solanum mammosum*. LINNÆUS names it, *Solanum caule aculeato herbaceo, foliis cordatis quinquelobis, utrinque villosis aculeatis*. Herbaceous Nightshade with prickly Stalks, and Leaves heart-fashion'd, divided into five Parts, and prickly.

It is a spreading Plant of a Yard high. The Stalk is green and round, and it is arm'd with many strong crooked Thorns. The Branches spread themselves irregularly, and the Leaves stand thick upon them. They are extremely singular and beautiful. Each has its separate Footstalk, and the Shape is somewhat Heart-like. They are broad at the Base, where they are usually indented for the Reception of the Stalk, and they have five principal Divisions. Their Colour is a strong green, but it is rendered paler by a downy Matter that hangs about both Sides of them; and they are arm'd on each Side with numerous upright yellow Thorns.

The Flowers are scattered over various Parts of the Plant; and they are not considerable. Each is form'd of a single Petal, which is tubular a little Way at the Bottom, and form'd into five large Segments at the Edge; and the Colour is naturally white, but sometimes dash'd irregularly with a dusky Purple.

The Fruit is the conspicuous Product; this is said to be of the Shape of a Pear, but that is an indeterminate Word, Pears being of various Forms: it resembles, in Shape and Size, a common Fig, but grows at the large End to the Stalk. Its Skin is smooth, and its Colour is a pure bright gold yellow. The Plant will often have forty of these upon it at a time; and, in that Case, makes a very conspicuous Appearance.

To know its Class, the Student must tear open a Flower. He will find its inner Structure perfectly correspond with that of the Egg Nightshade: This shews him to what Class it belongs, namely, the PENTANDRIA; and that it is of the first Section, MONOGYNIA; the Filaments being five, and the Style single among them. It also shews him something more, it justifies LINNÆUS upon the Principles of his own Method for joining that Plant with the Nightshades.

TOURNEFORT, whom the popular Writers follow, separates the Mad-apple as a distinct Genus, under the Name *Melongena*; but it is seen, upon Enquiry, that as the Filaments are the same in Number and Disposition, so are the several other Parts of the Flower.

The Culture of the Pear-fruited SOLANUM.

Take Care to have ripe Seeds, either from Plants that have grown here, or, what is much better, from the *American* Islands, in most of which it is common.

Let

Sept. Let a Hot Bed be prepared in Spring, and covered with good Garden-Mould, to the Depth of five Inches: cover it with its Frame; and when the Heat is moderate, carefully sow these Seeds, covering them only half an Inch with the same Mould. This is the proper Soil for their first shooting, but afterwards they will require a lighter and a richer Earth.

We have, on several Occasions, recommended to the Gardener the Earth from the Bottom of an old Wood-Pile, mix'd with the Remains of moulder'd Wood: this he should always keep by him; and, with various Mixtures, it serves for a great Number of Uses.

While the Seeds of this Plant are in the Ground, let him mix together two-thirds of good Earth, taken up from under the Turf in a rich Pasture, and one third of this Wood-Mould. Let them be well wrought together, and stand ready.

When the young Plants have a little Strength, let three or four small Pots of this Earth be set ready, and into each of them let the Gardener put one of the Plants from the Hot Bed, taken carefully up, and set in with as much Care. Let there be a little Water given to each, cautiously, not to bear down the Stems; and then let the Pots be plung'd into another Hot Bed. Let them be manag'd carefully, shading and repeating the Watering at Times, till they have taken Root; after this let them have Air in the Heat of the Day; and water as they want it: then, when they have stood a Month, prepare fresh Pots and a fresh hot Bed for them.

The Gardener will not be frightened at the naming several Hot-Beds for the raising of this Plant, because he knows they will, at the same Time, serve for several others. Let these larger Pots be brought to the Hot-Bed Side, with a little of the same Earth at their Bottoms. Let the whole

Quantity that is in the others, be shaken out with each Plant, and plac'd entire upright in the new Pot. There will be some white thready Substances dangling from the Surface of the Lump in various Parts; these are the extreme Fibres of the Roots: they must be clip'd off clean with a Pair of Scissars; and then the Space between the Lump of Earth and the Edges of the new Pot, must be filled up with more of the same Soil. When all is in, each must have a gentle Watering, and then the Pots must all be set in a new Hot Bed. They will grow with great Vigour after this; and the Gardener must take Care to give them Air as they want it, and a little Water.

When they are grown too big for their Frame, as they naturally will be about the Middle of July, they must be remov'd into the Green-house. If the Weather be very favourable, some of them may be expos'd to the open Air, in a warm Place; if it be cold, they must be plac'd in the Stove. We always shall recommend the rational Practice of trying some in each Manner, that Experience may determine what they can bear; as that can be learnt no Way else.

They must be remov'd into the Stove early in Autumn, and they will sometimes, in favourable Seasons, and with very good Management, flower the first Year; but they scarce ever fail to flower and perfectly ripen their Fruit the second.

This is the Method to be taken with all the tenderer Nightshades: there are others which require, in the worst Weather, no more Defence than that of a common Green-house; and some that are to be rais'd in the open Borders, these we shall occasionally name hereafter: thus much is said here, that the Gardener may not rashly suppose this Method is needful to every Plant of the Name of Nightshade.

4. YELLOW-FRUITED MOMORDICA.

Pl. IV. This is a Plant of such extreme Singularity, that
Fig. 4. it cannot fail to recommend itself to those who are curious in exotic Curiosities, the Fruit making a Variety among the rest that is extremely pleasing. It is called in *English*, the *Male Balsam-Apple*. Authors have described it under the Name of *BALSAMINA INDICA*; and some have taken its *Indian Name*, *PAVEL*. LINNÆUS calls it, *MOMORDICA pomis angulatis tuberculatis foliis villosis longitudinaliter palmatis*. MOMORDICA, with angular and tuberculated Fruit, and with Leaves hairy and longitudinally palmated.

The Root is fibrous. The Stalk is very long, but slender and weak: it supports itself by climbing upon Poles or stouter Plants, by means of extremely fine Tendrils; and in that Manner runs to a great Height.

The Leaves have long Footstalks, and they stand in Pairs. They are hairy and of a pale green, and their Shape is singular. They are divided into long and narrow Segments, in a finger'd Manner; but these are not dispos'd in ex-

panded Lines from the Rib, but proceed a little forward from the Body of the Leaf.

The Flowers are large, and of a fine and elegant yellow, pale, but very lively. They rise from the Places where the Leaves also are inserted, and are frequent from the Top to the Bottom of the Plant. They have each its small Cup, form'd of a single Piece, and cut at the Top into five spreading Segments. The Body of the Flower is, in the same Manner, divided into five separate Segments, and grows to the Cup.

The Fruits are not so numerous as the Flowers. There are, however, enough of them to engage the Eye, and very oddly diversify the Scene where they stand.

The Shape of the Plant is very large, oblong, and swell'd about the Middle: it is smaller at the Base, and terminates in a sharp Point. Its Surface is ridg'd, and beset with numerous Tubercles; these are broad, low, sharp-pointed, and hard. The Colour of the whole is at first a greenish white; but from this it by Degrees grows yellow.

Sept.

When fully ripe, it is of a fine gold Colour; and it then spits naturally at the Point, and discloses many large Seeds of a gold yellow, within a bloody Rind, which falls irregularly over the Inside of the Fruit and them.

Such is the Figure of this singular Plant: it remains that we enquire into its Place in the LINNÆAN System. It is of a Class different from all those we have described before; and it will, when rightly understood, lead to the Knowledge of a great Article of that System.

The Student naturally tears open a Flower to this Purpose, and seeks the Number and Disposition of its Filaments: probably, in the first he takes, he finds three; he is about to refer it to the third Class of the TRIANDRIA, for this Reason: but we must stop him, and desire that he will pull another.

In this he finds no proper or perfect Filaments; he sees three Fibres standing loose, but they have no Buttons on them. These Buttons he knows to be essential to Filaments marking the Characters of Plants; and he then finds them in this Flower defective. Here he finds a Style rising from the Rudiment of a Fruit plac'd underneath the Cup; and on referring again to the Flower where he found perfect Filaments; he there perceives no Style.

'Tis Time to explain this to him. In the Flowers we have hitherto selected for his Examination, the Male and Female Parts have been plac'd together in each. These, which are the most common, are call'd hermaphrodite Flowers; but there are others, in which those Parts are separated farther: this Plant is an Instance. The Body of the Flowers is alike in all, yet some of them contain only Filaments, and others only the Style. The first are call'd Male Flowers, because they have the male Parts perfect, and no female: the others are call'd Female Flowers, and they have no perfect Male Organs.

It happens in this Plant, that the male and female Flowers, tho' distinct in themselves, grow on the same Stem: in others, only male Flowers grow on some Plants; and, on other Plants of the same kind, only female.

The latter Kinds we shall take Occasion to speak of more largely, when we treat of some one of them: they are only nam'd here, to shew the Distinction, and illustrate the Denominations of the Class.

Sept. LINNÆUS places in one Arrangement, those Plants which have male and female Flowers produc'd separately on the same Plant. MOMORDICA is one of these. The Class is his twenty-first, and he calls it MONŒCIA; a Term form'd of two Greek Words, and expressing, that the Flowers, distinctly Male and Female, grow on the same Plant. This is the Class of the MOMORDICA. But it remains to enquire, under what Section it is placed in that larger Arrangement.

We shall have Occasion to explain to the Reader, on a subsequent Instance, a Class distinguished by the Name SYNGENESIA; whose Character is, that the Buttons of the Filaments are gather'd into a Cylinder, and united in that Form. Here it is sufficient to say, that as there are *monoecious* Plants, with the separate Characters of most of the other Classes: wherefore those Characters become, on this Occasion, only the Marks of Sections.

This is a tender annual Plant; but it's Culture is not difficult.

The Seeds must be taken from the ripe Fruit, and preserved till Spring.

They are then to be sown upon a Hot-Bed covered six Inches thick with mellow Earth; for the Seeds are often destroy'd when this Coat of Earth is too thin. It will be a good general Caution to the Gardener, to make it thicker than he has seen others do it: all Plants will thrive better; but to this Species it is essential.

Another Hot-Bed is to be prepar'd to receive these Plants, or as many of them as are intended to be rais'd, when they have got some Height. Into this they are to be transplanted when they have four or five Leaves; and they must be water'd and shaded till they have taken Root.

After this Time they must have a little Water every other Day, and as much Air as the Weather will permit. When they are well grown, they are to be planted into large Pots of light rich Earth; and some of them may be ventur'd in a warm Border in the open Air: the potted ones must be plac'd where they can have Warmth and Shelter. They will run up against the Back of the Building, and cover a Part of the Wall very agreeably. They will not endure much Cold; but, if the Season favour, those which are most expos'd will produce the best and finest-colour'd Fruit.

5. The MUSK HIBISCUS.

Pl. IV.
Fig. 5.

The Beauty of this Plant claims for it a Place in the best Collection: This is not limited to the Flowers, tho' they are large and noble; but the Manner of Growth, and singular Elegance of the Leaf, conspire to it.

Its vulgar Name is ABEL MOSCH: some call it ÆGYPTIAN MALLOW. The common Writers treat of it under the Name of ALCEA ÆGYPTIACA, and FLOS MOSCHATUS. It is properly a Species of the HIBISCUS.

Nº 4.

LINNÆUS has nam'd it, *HIBISCUS foliis subpeltato cordatis septemangularibus serratis hispidis*. 'Tis not an easy Name but a very expressive one: its Sense is, HIBISCUS, with rough, serrated, heptangular, cordated, and subpeltated Leaves.

The Sense of these Terms will be very well comprehended. The lower Leaves have seven Points, the upper five or three, as he will see in our Figure, and he will observe that there is a heart-like Dent at the Base; and that the Stalk is not inserted

M

Sept. inserted at the Edge of the Leaf, but somewhat underneath it.

There are Leaves in which the Stalk is fixed just in the Centre: these are called peltated, from their Resemblance of a Shield. This approaches toward their Nature.

'Tis needful to give the Sense of these Terms as they occur, no Dictionary having explained them.

The Plant is a Yard high; the Root is fibrous and spreading.

The Stalk is round, upright, and branched with a beautiful Regularity.

This is its Form in Nature; and let the Gardener see that he preserve it, not injuring the Growth by rough Waterings, or careless Transplantation.

The Leaves are wonderfully beautiful: they are very large; they stand on long Foot-stalks, which are inserted underneath in the main Body of the Leaf; and they are broad, and beautifully angulated.

Those on the lower Part of the Plant have seven Corners; about the Middle of the Stalk each Leaf has five; and at the Top they have only three.

The Surface of the Leaf is rough; its Colour is an elegant green; and its Veins are purple.

The Flowers are numerous and very large. They are disposed at Distances upon the Stalks. From near the Bottom to the Top they are vastly large, and of a pale but very lively yellow, stained in the Centre with a bloody Circle. Each is composed of five large Petals, and placed in a double Cup.

When these are fallen, there appears a large

Sept. brown Seed-Vessel, in which are numerous sweet-scented Seeds.

The Student will not be at a Loss to find whither to refer this Plant in the LINNÆAN System.

He will see it has all the Characters of the Fig-leav'd Hibiscus, described in our first Number.

When he sees the Filaments formed into a single Body, he will know the Plant belongs to the sixteenth Class, the *Monodelphia*: and when he observes the Number of the Antheræ, he will perceive it belongs to the *polyandrous* Section.

Culture of the MUSK HIBISCUS.

It must be raised with Care from Seeds; and the first Caution must be the having them good.

In the Beginning of *March* they must be committed to a moderate hot Bed covered well with fine Mould; and when the Plants have two Inches Height, they must be removed into another.

In this they are to stand five Inches distant.

They must be watered lightly, and shaded carefully, till they have taken Root; and then there must be as much Air admitted as the Season will allow.

When they are here grown to such a Height that they can no longer be contained in the Frame, they must be carefully planted out into Pots, and watered and shaded till they have taken Root.

They must after this be allowed as much free Air as they can bear, and they will flower in great Perfection.

The Seeds have not the Sweetness here, that they have in the natural Climate.

6. GOLDEN POINCIANA.

Pl. IV. No Plant deserves more a Place in the Collection of the Lover of Exoticks than this.
Fig. 6.

The Flower is elegant in the highest Degree; and there is great Beauty in the Leaves, and in the Manner of growing.

It is called in *English*, *Barbadoes Flower Fence*, and *Peacock's Feather*: It is also called, but very improperly, *Ebony*. The common Writers call it *Crista Pavonis*, *Frutex Pavonius*, and *Flos Pavonis*. LINNÆUS, *Poinciana aculeis geminis*: *Poinciana* with double Prickles.

The Root is fibrous and spreading; the Stem is firm, upright, branched, and ten Feet high; it is brown on the lower Part; the younger Shoots are green, and the Foot-stalks of the Leaves are often stained with red.

The Leaves are placed at Distances, and are extremely beautiful.

They are in the whole very large, but each is composed of almost innumerable Parts.

These resemble so many separate Leaves, and

they are oblong, broad, obtuse, and of a deep, but pleasing green; they are disposed in Pairs along slender Stalks or Ribs, ten or twelve Pairs on each, with an odd one at the End; and these are again placed regularly upon the principal Rib, which is a Continuation of the Foot-stalk.

This is what the modern Writers call a Leaf duplicately pinnated.

The Flowers grow in long Spikes at the Tops of the Stalks; and they have very great Beauty. They are very large, and their Colour is the most perfect Gold yellow, stained with a deeper yellow, or Orange Colour.

The Cup in which each stands is oblong and hollow; it is composed of numerous little Leaves, one of which is longer than the rest, and bends downward.

The Body of the Flower consists of five large Petals. They are unlike in Form, four of them being rounded and equal; and the fifth, which is the lowest, larger and indented at the Rim.

After



The True Acanthus



Red Plumeria



Pear-fruited Solanum



Yellow-fruited Momordica



The Musk Hibiscus



Golden Poinciana

Sept. After the Flowers appears a flat Pod ribbed cross-wise.

The Flower in this Species need not be opened to find the Number of the Filaments; for they stand out to a vast Length, and are extremely conspicuous. Their Number is ten, and they are set in a crooked or stooping Posture.

The Student has not yet in the Course of these Enquiries met with a Plant that had this Number of Filaments; but he will not be at a Loss to what Part of the LINNÆAN System to refer this Genus.

The Filaments are equal and regular in their Growth.

This is the first Consideration; and this shews him that he is to determine the Clafs from their Number.

LINNÆUS has arranged together those Plants, which have in every Flower ten Threads, into his tenth Clafs. This is one of them.

He calls this Clafs *Decandria*: a Term formed like his other of two Greek Words, and signifying Plants that have in each Flower ten male Parts.

The Style rises single in the Middle of these Threads, and that determines the Plant to be of the first Section, that is, the *Monogynia*.

Culture of the POINCIANA.

Let good Seeds be obtained from *Barbadoes*, or any other of the warmer *American* Islands, for it is common in all; and let these early in Spring be sown half an Inch deep upon a moderate hot Bed, covered five Inches deep with rich Mould.

Prepare a Mixture of equal Parts of Mould and rotted Wood, and add about an eighth Part of sifted Coal Ashes: work all this well together, and let it lie ready.

When the Plants are risen to a little Strength, fill half a dozen Pots of a middling Size three Parts with this Mixture: open a small Hole in the Centre of each, and into this put carefully one of the Plants from the hot Bed.

Give them a little Water, and then set the Pots into a hot Bed of Bark. Sept.

Shade them till they have taken Root; after which raise the Cover of the Bed to give them Air when the Temper of the Day will permit.

From this Time they must be carefully watched, and watered; often, but a little at a Time.

When they have grown to a good Strength and Height, as many Pots of a larger Size must be filled with the same mixed Soil as the first, and they must be carefully removed into these.

The Method is to put only a little of the Soil first into each large Pot; then to take out the Plant from the smaller, with all the Earth in a Lump.

The Fibres hanging round the Surface are then to be cut off, and the Lump set upright in the larger Pot.

There must be then more Earth piled round to fill it up.

The Plants being now removed into the Pots where they are to remain, must be watered and set again in the Bark Bed, shading them till they are thoroughly rooted, and then admitting the Air by Degrees.

When they have grown to the Height of the Frame they must be removed into the Stove. They are there to be placed in a fresh Bark Bed, and watered carefully a little at a Time, and often.

They are there to be treated as other Stove Plants; and with good Management they will produce Abundance of Flowers.

When the Buds for these appear, the Earth at the Top of the Pot should be removed, and some fresh put in its Place; they must also be watered often: and thus the Flowers will grow to Perfection.

It is at this Time they require a particularly nice Management; otherwise the Buds, after a fair Promise, wither and come to nothing.

C H A P. II.

The Management of the Garden and Stove for the Middle of September.

THE Season of transplanting is now come for the Flower-Garden, in all its Products of the Perennial or of the Biennial Kinds not removed before.

We directed the Gardener to prepare his Borders last Week, by a careful digging; and they have now lain to receive the double Advantage

of Air, Sun and Rain, and of a regular settling.

The Air and Sun have calcined the broken Clods thrown up from below; and the Dews have impregnated the whole with Vigour; this short Fallow has served to recruit the Ground, and the Plants may be removed hither from the Nursery.

When

Sept. When as many of these as will be required for the succeeding Years flowering are brought into the Garden, the next Care is the propagating those already there.

The Polyanthus is a very beautiful Flower, when of a good Kind. It has now grown to a large Tuft in each Place where it has stood a Season or two to flower.

The Roots having encreased, are to be parted; and the Plants set in a shady Place, and watered gently.

Some of the Catch-Flies and Campanulas require the same Treatment; and whatever other of the fibrous-rooted Plants there are, which have stood long enough in their Places to have formed large Tufts.

For every separated Plant there must be opened a small Hole; and let the Gardener see that the Earth be not cak'd, or pressed hard at the Sides.

Let him cut off the Ends of all the Roots; and then setting the new Plant upright, carefully close the Earth about it, covering it to a due Height, but leaving the Heart free and clear.

It is a Practice of some Gardeners, to defer the parting many of the fibrous-rooted Plants till Spring; but there is a great Advantage in doing this in Autumn: because the new Plants will flower with tolerable Strength the next Year. When it is done in Spring they should be removed into the Nursery, and brought out into the Borders the Autumn following; for a good Gardener will never load these with any thing that is not to flower that Year.

The Florist has his Auriculas and his Carnations at this Time well settled, and in good Order in their Pots.

He must observe the Weather; and if much Rain fall, place them under Shelter.

The common erroneous Practice on this Occasion, is to lay the Pots on one Side, that the Wet may not get at the Plants; and there are those who write to inform the Gardener, that give him his Choice of either Practice, as if the two were equal.

We must guard him from such Errors.

The Shoot for the next Year's Stalk is very early made; and it is the Course of Nature that it will direct its Top strait upwards.

This it begins from the Moment the Pot is laid upon its Side; and when it is set upright again, the Shoot is to make another Turn to get a new Perpendicular.

This disturbs the Course of the Juices, and hurts the future Flower.

The Seeds of many of the best Flowers, and other curious Plants, which require no additional Heat, but only a good Soil and Rest, should be sown this Week.

Prepare for this Purpose the following Compost, or artificial Mould.

Mix equal Parts of rich Earth, taken from

under the Turf in a good Pasture, and of the Bottom of a Wood Pile; add to these about one sixth Part of fine Sand, and somewhat less of sifted Coal Ashes: mix this very well together, and fill with it some strong square Boxes of coarse Boards, made about ten Inches deep.

When the Surface is perfectly level, scatter on the Seeds, and cover them a third of an Inch with the same fine Soil.

This is the Method to have fine Auriculas: and the Polyanthus and several others, at the Gardener's Pleasure may be sown in the same Manner.

Let the careful Gardener, when he has planted his Borders and sown his choice Seeds, go round the Ground, and observe what Plants have past their flowering.

Those from which he intends to save Seeds he must mark for that Purpose, tying them up to Sticks; but let him make it a universal Rule, never to let any perennial Plant ripen its Seed, unless he wants it; for there is nothing weakens the Root so much.

The Stems of all these he must cut down close to the Ground, and dig the Earth round about their Roots.

This breaks off the Ends of their Fibres, from which innumerable others shoot out immediately; and it prepares a fine well-broken Earth to receive them, and to afford them Nourishment.

It will also strengthen them farther, if a small Quantity of very fine Mould, well worked up with rotten Dung, be sprinkled lightly over them, and settled by a regular and gentle watering.

The last Care in the common Earth for this Week will be the preparing for planting the Roots of Hyacinths, taken up when their Leaves were withered, and till this Time preserved out of the Ground.

The *Dutch* excell us in these Flowers; and the Reason is partly that they raise them from Seeds, whereas we commonly propagate them by Off-sets from the Root; and partly that they understand the proper Soil for them; of which our Gardeners and their Instructors are equally ignorant.

The *Dutch* Compost we have made a Subject of great Enquiry, and are possessed now of a Receipt for the Composition; which comes too well authenticated to bear a Doubt, and which perfectly agrees with Reason.

We have not had Opportunity of trying it since we received it; but from the Credit of our Correspondent; and from the Nature of the Plant, and the Ingredients in the Composition, we may venture to assure the Gardener of its Success. It is this.

Throw upon an open expos'd Spot of Ground one Load of common Mould: add to it a Load of dry Mud from the Bottom of standing Water, and three quarters of a Load of Willow Earth: mix these together, and then add to them half a Load

Sept. Load of Sea-Sand, taken wet from the Shore; and half a Load of rotted Cow-Dung: stir up all these together, sprinkle a little Water over the Surface, and lay them up in a Heap.

Break this Heap once in four Days, and in a Fortnight's Time it will be fit for Use.

This Quantity will make a moderate Bed for Hyacinths; and we shall give the Method of using it; but first it may be necessary to speak of the Particulars: When Receipts are brought from Abroad, they are often of little Use, unless accommodated to the Country where they are to be used.

The Gardener must know two Things; the first what he may occasionally vary, and the other wherein he must be strictly punctual to the Receipt.

Our Florists know the worth of Willow Earth; but this is not a Country where it can be got by Loads. With us a Peck or two of this, from the hollow Stump of a decay'd Tree, is a Treasure; but in *Holland*, where Willows are planted every where; and, from the Rottenness of the Soil, decay soon; it is abundant.

All that is meant by this Ingredient is a light Earth, produced partly from rotted Wood.

We have often recommended the Earth from the Bottom of an old Wood Pile: this may be had in Plenty, and it is of the same Nature with Willow Earth, and may be used in its Place.

The Gardener may take this Liberty with the Materials: but there is another he must not take, which yet would appear, to those unus'd to the Doctrine of Manures, less essential.

If he be situated in an inland Place, he will be led to use Pit-Sand instead of Sea-Sand: but this he must not do. Pit-Sand is usually foul on the Surface, every Grain of it; and this Foulness is from Clay.

Clay is destructive of the Hyacinth Root, therefore this must not be us'd. If there be a River near, let him take the Sand from its Bottom, where he will find it clean. If there be no River in the Neighbourhood, let him chuse large coarse Pit-Sand, and putting it into a Tub, pump upon it a great deal of Water, stirring it with a Birch-broom, and repeating the Washing till the Water runs off clear. The Sand will then be clean: but it will want its Saltiness. This is a material Article: Salt properly us'd is a very rich Manure, and it agrees particularly well with the Hyacinth.

Sept. To give this Addition, he must dissolve common Salt in the Water he sprinkles over the Ingredients; and, for this Quantity, a Pound and a Quarter of Salt will be sufficient.

Having thus made up his Hill, we will suppose in the Beginning of the present Week, it will be ready by the End of the next for Use; and we shall, in our succeeding Number, tell him how to dispose it.

All we shall add on this Head, is, that the Mud of Ponds and Ditches is common enough here, but is neglected: it is a Kind of Virgin Earth, and it exceeds all other Mould in Fineness.

The Week's Business in the common Ground, respecting hardy Plants, being thus compleated, let him turn his Eye upon those Exotics which he has placed for the Summer out of Doors. Summer is over; the Season now approaches when the cold Nights will be injurious to them; and they must be defended against the Hurt.

This is to be done by taking them into the Green-house.

As they are brought in let them be carefully examined. Let all dead Leaves be taken off; for the Vapour from them is infectious when confined within Doors. When they are thus clear'd of decay'd Parts, the Earth should be carefully dug up about their Roots, with a small strong Trowel; and a slight Covering of fresh Mould put over them. They are then to be plac'd handsomely on the Benches and on the Floor; and that Care is over.

There are a peculiar Kind of Plants which belong to this Consideration, and require a particular Direction on this Head; these are the *CEREUS's*, and that large Class known by the common Name of succulent Plants.

None receive so much Benefit from the free Air as these; therefore they should be suffer'd to remain in it as long as they can with Safety. This is to be determin'd by the Weather.

They cannot bear Wet; and much less Frosts: therefore the Season must guide the Gardener when to take them in; not the particular Days of the Month.

They may sometimes be left out till the Beginning of *October*, and it is greatly to their Advantage; but if the Days be very wet, or the Nights frosty, they must be taken in sooner.

S E C T. II.

The Business of the SEMINARY, for the Middle of September.

THIS will, for the present Week, be compriz'd in a very few Words. Let the Gardener break and turn the Ground he has been preparing for receiving his Trees and Shrubs yet to be planted: let him water those already sett, and

clear away Weeds from such as are to remain in their Places. This done, he may quit this Piece for the present, to attend where he is call'd more needfully.

S E C T I O N III.

POMONA, or the FRUIT-GARDEN.

WE shall follow in this Part the same Course as in the others; mentioning what Fruits are in their Perfection at this Time, and what Care and Culture the Trees require that bear them. But before we enter on this Article, we must caution the candid Reader to charge us with no Faults but our own; for there will here be the Appearance of some in us, which truly belong to others.

Nothing is so common as a Catalogue of Fruit, but nothing is so imperfectly or erroneously treated by most who have attempted it.

Gardeners Kalenders have been given by the first Writers on these Subjects in our Language; and these have been transcrib'd from one of them into another down to the latest: every new Author adding something; and the very best not perceiving that they record, under a new Name over again, the same Fruit they have mentioned from their original Author under another.

This is the Cause why Monthly Catalogues of Fruit are so enlarged of late, and so confus'd. The Authors hear a Parcel of Names us'd, and they set down all they hear; not perceiving that often two or three of them denote but one Kind; because that one is not known to them distinctly. Indeed, the Variations in some Instances are themselves so slight, or so uncertain, that there is some Excuse: for these are not Distinctions of Species, which are permanent and immutable; but Varieties from the Accidents of Culture.

What can be done in this we shall attempt. The Path marked out by Reason is open and evident. Lists of Names are useless, because the Reader may apply them, like the Writer, to one Fruit or another.

We propose Information; and we shall, in this Case, attempt it, by adding to the Name of every Fruit the Description of its peculiar Characters. This will convey Instruction, at the same Time it reminds the Reader of the Products of the Season; and we flatter ourselves will place some Merit in a Part, in all other Works of this Kind, useless.

The early Peaches are now gone. The NECTARINE, TROY, and CAPUCHINE, and the WHITE MAGDALEN and MONTAUBON, are either rotted or ill-tasted.

The Middle Peaches are just in full Season. The MINION has been ripe some Time; but it continues as excellent as at first: this is a large Peach, with a small round Stone; 'tis red to the Sun, and whitish next the Wall. The Juice is rich and high-flavour'd; and it is bloody round the Stone.

The ROYAL GEORGE is now full ripe, and is a very fine Peach: it is round, and has no Point, as some, that resemble it, have at the Tip. There runs a Cleft down one Side, and it is flat at the Stalk. It is downy, and the Ground-Colour is white: where it is open to the Sun it is of a Blood-red; and where it faces the Wall it is usually spotted. The Flesh of it is very well tasted, and melting; and it is of a bright red, not so deep as the former, near the Stone.

The NOBLESSE is another Peach now in its Perfection. It is roundish, and of a pale green Colour, but of a deep Purple on the sunny Side. The Flesh also is greenish, and very well tasted; and it comes clean and free from the Stone.

The PORTUGAL PEACH is also now in its Perfection. This is one of the large round Kinds: its Colour

Sept. Colour is a yellowish White next the Wall, and scarlet toward the Sun; and the whole Fruit is covered with a thick Down. The Pulp is firm, not melting as the former, but the Taste is very fine: it is red about the Stone, and sticks to it very close.

Of Nectarines there are also several Kinds now in Perfection. The *Roman* Nectarine has been long famous, and it is worthy to continue so. It is now in its best Condition. It is large and round: yellow toward the Wall, purple on the sunny Side, full of a rich red Juice, and very red near the Stone. The Pulp sticks to the Stone, and when the Fruit is ripe, the Skin shrivels.

TEMPLE'S Nectarine is paler: its red Side is faint, and the Pulp is less stain'd. Its Shape is longish, and it is well-tasted.

The *Newington* Nectarine is also now ripe. It is purple all over, or nearly so, and is round and large. The Pulp is very melting, it is full of a rich Juice, and sticks to the Stone.

These are the Kinds of the two principal Fruits the present Week presents from a good Garden.

The best Grape of this Time is the *ARBOIS*, or, as some call it, the *French Sweet-water*. The Clusters are large, the Grapes of a moderate Size, and round; and their Colour is green whenever so ripe.

The Leaves of this Kind of Vine are white, and dusty underneath.

The *BLACK FRONTIGNAC* is also in Perfection. It is a long-shap'd Grape, and the Bunches also are long and large, and turn brown at this Season.

Of the Plumb there is now the *BLUE PERDRIGON*. Its Colour is purple, and it is covered with a thick rich Dust, which is of a paler blue. It is

one of the smaller Plumbs, and is round, but somewhat pointed toward the Stalk. Its Pulp is firm, of a pale yellow, finely tasted, and easily parting from the Stone.

The *WHITE PERDRIGON* is of the same Shape, but larger. Its Skin is yellow, but it is thick dusted with a white mealy Powder. The Pulp is firm, and its Colour is a pale green. It is very well tasted, and parts freely from the Stone.

The *GREEN GAGE* is another Plumb of this Season. It is a middle-siz'd Kind; and is round, and has a small Furrow at the Side. Its natural Colour is an Olive-green; and the sunny Side gets a Tinge of purple, and is covered with a bluish Powder.

The Pulp is of a superior Flavour to any other; it is full of Juice, and it sticks to the Stone.

Many will find by this Description they have eat other Plumbs under this Name. The Excellence of the *GAGE* Plumb has made cunning Nursery-men call many others by its Title, and ignorant Gardeners have believ'd them.

Of Pears the *JARGONELLE* is in good Season. It is a middle-siz'd longish Pear with a large Eye, and is small at the Stalk. The sunny Side is of a brown red, and the other yellow.

We shall close the Fruit Account with the *VERNISINGUE FIG*, now ripe; and, for those who love that kind of Fruit, excellent. It is a round brown Fig, pointed at the Stalk, and the Skin cracks when it is ripe. The Pulp is very rich.

These are the Fruits to be expected now; and there is not much requir'd at this Time but the gathering them. When they are off the Trees, we shall direct the Gardener how to prepare for his future Stores.



SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

CHAP. I.

Products of the Kitchen-Garden now in Season.

THIS useful Quarter affords at the present Time, beside the common Products, the Roots of Salsafie and Scorzonera, which are very wholesome as well as pleasant. There are also many good Melons. The small green Melon is now in its greatest Excellence. The Rind of this is smooth, and the Flesh is green and full of a rich Juice.

The *Spanish* Melon is also in its Perfection,

This is white on the Outside, and but lightly wrinkled, and the Flesh is red.

The *Dutch* Parsley-Roots are now in their full Flavour; and the Tomato Fruit is ripe. Few eat this; but it is agreeable in Soups. Those who are us'd to eat with the *Portuguese Jews* know the Value of it. Chardons are also in Season; and, if well manag'd, will be now white, large, and tender.



C H A P. II.

Of the Care and Management of the Ground.

THE Care of the Gardener for future Crops here, is to be continued with the greatest Diligence.

We nam'd Chardoons as now in Season; and his Regard on this Head must be to raise a Crop to succeed that now in Use. If the Ground have been tolerably manag'd, there will be a Bed of this useful Plant two or three Months old from its Transplantation, and now ready for Earthing.

This is a Piece of Gardening little understood, and consequently ill practis'd. The Weight and Temper of the Earth about the Stalks, are the two Articles on which all depends: but this Temper or Degree of Moisture can never be duly obtain'd without the Fineness of the Soil; nor can there be due Weight, unless it have some Firmness.

The proper Soil for Earthing up Chardoons, is a Mixture of ten Bushels of Garden-Mould, one Bushel of large Sand, and three Pecks of burnt or calcin'd Clay. The Clay for this Purpose, is to be burnt gently, till it crumbles away. It is a Practice well known in Husbandry; and should, for this Use, be brought into Gardens.

This Mixture should lie together a Week, turning it frequently; and then it must be brought to the Ground.

The Leaves of the Chardoons must be ty'd up with a Rope of Bais, or old Matting. This Compost must then be laid up to them, a Foot or more in Height; and afterwards rais'd higher occasionally. Care must be taken not to bury the Hearts of the Plants; and the Earth must be dry when it is put to them. It will cling close without clogging them, and will bring them to perfect Tenderness and a fine Flavour. If Chardoons were rais'd with this Judgment, there would be more Regard shewn to them than is at present.

If there be any wet Days this Week, let the Gardener here continue his Work of Transplanting.

If the Garden have been tolerably manag'd, there will be Colewort Plants of about two Months Growth; Cabbage-Plants of six Weeks, and Collyflowers of about a Month. These will all require to be remov'd, but in a different Manner, and with different Intentions.

The Coleworts may be transplanted where they are to stand till Spring; and the Ground should be well dug for them, or they will make little Progress during Winter.

The Cabbage-Plants should be set out at Distances into a good Piece of mellow Ground,

where they are to stand till they are remov'd to the Places in which they are to remain. These will bear Exposure; but it is otherwise with the Collyflower Plants; they are of a tenderer Nature, and must be manag'd carefully.

Some plant them out upon decay'd Hot-Beds that had serv'd for raising Cucumbers and Melons; and we are not to wonder Gardeners content themselves with doing this, when there are Writers who recommend it. The bringing these Plants forward at this Season, is a very important Article: but it cannot be well done without a better Heat than is to be obtain'd from such exhausted Materials.

For this Purpose, let a fresh Hot-Bed be made with good Dung, that has lain to evaporate the most violent Part of its Heat: and let it be covered nine Inches deep with the finest Mould.

Upon this draw Lines four Inches asunder, and at every three Inches make an Opening; into each of these Openings put one Plant; and set it carefully upright, with the Mould clos'd nicely to its Stalk. Give a gentle Watering to the whole Bed, and repeat it as Occasion requires.

In this Bed they are to remain three Weeks; and we shall then direct the Gardener in what Manner to make the best Use of the Advantage he has gain'd, by planting them out into their Beds, where they can be defended by Glasses, and stand the Winter.

The Rains that cause the transplanted useful Herbage to grow so kindly, have the same Effect upon wild Nature; and bring up Weeds as fast. The Gardener is to be aware of this, and to clear them off as they rise. This is best done by Hand among the young Crops, and by the Hoe among those which are of more standing.

In either Case the great Advantage is to destroy them as they rise. Seedlings, whether of the useful or wild Herbs, exhaust the Earth but little; but the larger Growth absorb that Nourishment which has been prepar'd, with all the Gardener's Care, for the Nourishment of his Crop.

They must never be suffer'd to ripen their Seeds, because they will so lay the Foundation for a succeeding Crop; but that is not all the Care of the Gardener: for Nature supplies those Seeds so abundantly, that they will never fail to rise where better Things are planted, the same good Earth inviting them.

With this Care of cleaning every Part from them, may end the Labour of the present Week.

E D E N:

A

COMPLEAT BODY of GARDENING.

N U M B E R V.

For the Last Week in *S E P T E M B E R*.

S E C T I O N I.

F L O R A, or the P L E A S U R E - G A R D E N.

C H A P I.

Flowers and Curious Plants now in their Perfection.

I. C E Y L O N P A N C R A T I U M.

Sept.
Pl. V.
Fig. 1.

THIS is a Plant of equal Singularity and Beauty; and if these should recommend it to the Curious too weakly, they would yet be influenced to receive it from the Scent of the Flower, which is in the highest Degree pleasing.

It is called the *Ceylon Narcissus*, and by the common Writers *Narcissus Ceylonicus flore hexagono*: Its *Indian* Name is *Catulli Pola*.

It is properly a Species of *Pancratium*, and is called by LINNÆUS, *Pancratium spatba uniflora petalis reflectis*: *Pancratium*, with one Flower, and with the Petals turned back.

Its Height is about ten Inches, and the Stalk sustains a single Flower.

The Root is a Bulb, of an oval Form and of a pale brown Colour.

The Leaves are long, narrow, and of a light green. They resemble those of the *Narcissus*, but they are shorter.

The Stalk rises at the Side of the Cluster of them, is green, round, thick, and juicy.

It is naked to the Top, where there at first appears a membranaceous Case, serving as a Cup

Numb. V.

to the succeeding Flower. This is what LINNÆUS calls the *Spatba*.

From this bursts afterwards one Flower.

It is large, and of a snowy Whiteness; of an hexagonal Figure, and of a very fragrant Scent.

It consists of two Parts; the Petals, and what Authors have called the Cup: but this is a very vague and improper Term. The *Spatba*, or membranaceous Case, growing at the Top of the Stalk, and surrounding the Base of the Flower, serves as the Cup, and is properly such to this and many other Kinds.

Within this rise the Petals; and within them, where in the Course of Nature nothing is expected but the Filaments and Style, there is a large hollow Part of the like Substance with the Petals.

This, from its Form, these Authors called the Cup; but our Student, from what he has been already informed, will not be at a Loss to know by what Name it is properly to be expressed.

We have told him, that when in the Body of a Flower there stands any singular Part distinct

O

from

Sept.

Sept. from the Petals, and from the Filaments and Style, that Part is the Nectarium of the Flower.

This is the Case in the present Instance.

This singular Part is the Nectarium of this, and all other Flowers of the same Structure.

Having thus explained the Nature of the several Parts, the Structure of the whole will be easily described.

The Nectarium occupies the Centre of the Flower, and is its most conspicuous Part. This is very large, hollow, and spreading. It is tubular at the Bottom, and thence expands in the Manner of a Funnel, and is divided at the Edge into twelve Segments.

The Petals surround this, and are inserted on its tubular Part a little above the Base. They are six in Number, and they are long, narrow, of the same snowy White with it, and turned back at the Ends.

The Filaments are six in Number, and their Place of Origin is particular.

They rise not from the Centre of the Flower, but from the Edge of the Nectarium between the Segments.

In the Centre rises the Style, which is single and strait. The Seed-Vessel is roundish, but marked with three Ridges, and contains numerous Seeds.

The Student will know, that as the Filaments grow regularly in Disposition and Proportion, their Number is to establish the Character of the Class to which this Plant belongs.

It is one of the sixth Class of LINNÆUS, the *Hexandria*; and as the Style is single, it is of the first Section, the *Monogynia*.

Sept. The Plant is a Native of the East, where it grows wild in sandy Places.

Its Culture is indicated by this short History.

It must have a dry, light Soil, to imitate its natural Earth; and Heat, to mimick the Sun's Power in its proper Climate.

It might be produced from Seeds, which it yields in Abundance; but this would be a tedious Way, for the Seedlings are several Years before they flower.

The best Method, therefore, is by Off-sets which are produced in Abundance, and which must be taken off, otherwise they hurt the flowering of the main Root.

These Off-sets, or the entire Roots received from the *Indies*, are to be planted with Care in Pots in a proper Compost: and the best for the Purpose is this.

Take of fine Earth, got from under the Turf in a dry, rich Pasture, and freed from all Fragments of Roots, one Bushel; of Earth from the Bottom of a Wood-Pile, half a Bushel; and of clean Sand a Peck and half. Work all this well together, and let it lie exposed to the Air, Sun, and Dews a Fortnight.

Then put into some middle-siz'd Pots as much of this Compost as will three Parts fill them.

Upon this place the Roots, and then fill up the Pots, carefully settling the Earth about them.

This, with the common Culture of tender Exotic Plants, will make them flower in very great Perfection.

They will require some Water at Times, but if that be given carelessly, it will be very injurious.

2. PURPLE HÆMANTHUS.

Pl. V. This is another Flower of extream Beauty, as well as Singularity; and every Way worth Notice.

It is of the bulbous Kind like the former, and has the same Advantage of flowering at this Season; most of this Kind displaying their Beauties in the Spring.

In *English* it is called the *Blood Flower*, the *African Tulip*, and the *Bloody Lilly*.

The *Latin* Writers in general name it *Hemantbus*, and *Hemantbus Africanus*.

LINNÆUS calls it, *Hemantbus foliis linguae-formibus planis*: *Hemantbus* with plain and Tongue-like Leaves.

It has been thus supposed a Kind of Tulip by some; a Narcissus by others; and by a third Set referred to the Lillies; but all very improperly, as will be seen by the Structure of the Flower, which is distinct from these and from all other Kinds.

The Root is bulbous and vast; it equals a Child's Head. Its Colour is white, and it is composed of thick and numerous Coats. From its Base run

Fibres, whose Grossness answers to the Bigness of the Root. They are equal to Crow Quills.

The Stalk rises to the Height of twenty Inches, and is extreamly singular and beautiful: it is very thick, somewhat flatted, of a pale green, and spotted and clouded all over with white and purple, so that it resembles a Piece of polished Porphyry.

The Head whence the Flower is to burst, appears upon this at its first rising; and is then of the Bigness of a large Walnut. Its Colour is brown, and its Shape somewhat resembles that of the Stalk, for it is a little flatted.

At length when the Plant has its due Height, this bursts and discloses its Beauties; it appears, and it is called, a single Flower; but we must teach our Student to understand the Parts of Plants more accurately.

When this Head opens there appear six Leaves. These being closed together formed the Head, and now open they are understood by common Writers to be Petals of a Flower. They are very large, and throughout of a Blood-red, inside

Sept. side and outside equally; for the brown Tinge on the outer Surface ripens into this red, by the Time of their separating and expanding. This being understood to be the Flower, the internal Part was supposed to be filled with Filaments and their Buttons, and the other Organs of Fructification: but the true Structure of the Flower is this.

These six Leaves which are the Cup surround and defend the proper Flowers: and when they open they shew these, which are numerous, and disposed in a Kind of Umbell.

These small ones are the proper Flowers, and they are about thirty in Number on one Stalk.

Each is formed of a single Petal, divided into six Parts at the Edge. These are long and narrow; and the tubular Portion at the Base is angulated and short.

In the Centre of each of these Flowers rise the Filaments, and in the Midst of them the Style.

This shews these separate Parts are properly the Flowers, and the large purple Body but the Cup; for 'tis in the Centre of the Flower these always grow.

The Filaments are six in each: they are inserted in the tubular Part of the Flower, and they have oblong incumbent Buttons.

The Style is a plain Thread of the same Length. The Filaments are white, and their Buttons are of a Gold Yellow; and the Body of these smaller Flowers is scarlet.

The Place this Plant has in the LINNÆAN System is easily seen: it is, as the former one, of the first Section of the sixth Class, of the *Hexandria Monogynia*; Plants in whose Flower there are six separate Filaments and a single Style.

The Leaves are in the Course of Nature now to be described; for they appear not with the first Shoot of the Stalk, but about the Time of the Flowers opening. These are in Number only two; they rise at one Side of the Stalk, and they are large and of a beautiful green. They are broad, oblong, and rounded at the Ends; and spread themselves opposite upon the Surface.

It is a Native of *Africa*, and requires with us some Care and Management: but its Singularity and extream Beauty very well deserve it.

The Roots are to be obtained from the *Cape of Good Hope*, and they will easily be brought in Perfection. They will also freely live with us and shoot their Leaves, but without a just Care they will not flower. The Time of their flowering is the very End of *September*: but this will appear less strange to those who consider that it answers to *April* at the *Cape*, the natural Time of such Plants flowering.

It seemed some Time a Disgrace to our Gardeners, that a Plant, which FERRARIUS described as flowering in the *Barbarini* Garden, and COLUMNA in that of Prince CÆSIUS, should mock their Care and Affiduity; but about sixty Years ago they brought it to flower in *Holland*, and after that the Culture became more understood here.

However, till there are many who have been possessed of good Roots several Years, which never have flowered; We shall therefore lay down the true Management of them, and will venture to assure the Possessor, that under this Care they will rarely fail.

The Culture of the PURPLE HÆMANTHUS.

The first Care is to make a proper Compost, or artificial Soil.

The general Practice places these Roots in too rich an Earth, and this prevents their flowering.

The Author of the *Gardeners Dictionary* orders Dung in the Soil wherein they are planted; but Experience shews that to be prejudicial.

Justice to the Publick compels us to declare, the Errors in that Book occasioned our undertaking this: Errors, in which its Author has so confirmed himself by repeated Practice, that all Improvements seem to him Mistakes.

Let there be mixed together a Bushel of dry Earth, taken from under the Turf in a good Pasture, half a Bushel of Sand, and a Peck and a half of Earth from an old Wood-Pile. Add to these half a Peck of clean sifted Coal Ashes: Stir and mix all these well together, and let them lie a Month before they are used.

Then about the Middle of *June* prepare two or three Pots. Carefully lay in as much of the Compost as will fill each Pot two thirds. Shake it down, and upon this place in each Pot one Root. Lay in more of the Earth carefully round, and cover it about a quarter of an Inch above the Top.

When the Roots are planted, give a gentle Watering, and set the Pots in a shady sheltered Place.

Once in a Fortnight give them a little Water; and thus let them stand two Months.

Then remove them into a warmer Place, but still in the open Air; and give them a little Water once in ten Days.

Let them stand thus till the Middle of *September*, and then bring them into the Stove. Give them a gentle Watering when first put in, and repeat it afterwards every Day.

This frequent Watering, and the new Heat will make them shoot at once; and the second Year they will flower very strong.

The Earth should be taken off from about the upper Part of the Root, and fresh of the same Kind put in two or three Times a Year; and Care must be taken, neither to give them too much Water, nor to let them want it.

This Way they may be certainly and successfully brought to flower, whether the Roots have been obtained from Friends here, or from the *Cape*, their natural Place of Growth.

The beautiful Flower called the *Guinea Orchis*, or *Satyrium e Guinea*, is of this Genus, and explains the Structure of the Flower most plainly; for in that the Leaves of the Cup are green, and the separate Flowers more elevated and distinct.

This will be described and figured hereafter.

Sept.

Sept.

3. AZORIAN JASMINE.

Pl. V.
Fig. 3.

This is a very elegant Shrub, and worthy a Place in every Collection, for the Regularity and Beauty of its Leaf, and the Fragrance of its Bloom.

We see it in general bearing only a few straggling Flowers; but that is not the Nature of the Plant: it arises from its ill understood Culture. We shall from Experience direct the Gardener how to make it shew to much more Advantage.

It is called by the Vulgar Ivy-leav'd Jasmine, from its single Leaves somewhat resembling the undivided Leaves of Ivy; but this is a very ill imagined Title.

The common Writers call it *Jasminum Azoricum trifoliatum*, from its Place of Growth, the *Azores Islands*, and from its Leaves growing three on each Foot-stalk.

Its proper Name is, *Jasminum foliis oppositis ternatis*: *Jasmine* with Leaves placed three on a Foot-stalk.

It is a spreading Shrub, not very regular in Growth, but in all the Wildness far from unhandsome. The Trunk is covered with a pale grey Bark; the young Shoots are soft, tender, flexible and green.

The Leaves are placed regularly in threes, and these again in Pairs upon the Stalks: one Foot-stalk carries three Leaves; and these Foot-stalks rise opposite to one another.

The single Leaves are large, of an oval Shape, and of a deep green: they are broadest at the Base, and smaller all the Way to a Point.

The Flowers are disposed in Tufts at the Extremities of the Branches, each Foot-stalk splitting naturally, and supporting two of them, and the whole Tuft amounting to eight or nine Pair when in full Glory.

Each Flower is large and white, and much resembles that of the common Jasmine, which it exceeds greatly in Fragrance.

The Place the Plant holds in this LINNÆAN System, will be easily distinguished by an Inspection of the Flower. This is formed, as in the common Jasmine, of a single Petal, divided into five narrow Segments, and in the Centre rise two short Filaments, crowned with their proper Buttons, but buried in the tubular Part of the Flower. The Fruit is a small Berry.

The two Filaments shew that it belongs, as the common Jasmine, and that large flowered Kind we have described before, to the second Class, the *Diandria*, those which have only two male Parts in the Flower; and the Style being single, shews also it is of the first Section.

Its native Place, we have observed, is the *Azores Islands*; and it is there found in damp Ground. This indicates its Culture.

It will require a rich Earth like that naturally, and most usually found near Waters: and it will need some Moisture, and a Defence from extreme Cold.

The best Way of propagating it is by Layers, and upon the Principles already delivered, let it be thus done.

Chuse for the Mother Plant one that is vigorous and healthy; and having fixed, we will say, upon three Branches that are fit for laying, raise three Treffels or Frames of any Kind under them, able to bear Pots of Earth.

Mix together three Bushels of fine rich Mould, taken from under the Turf in a fertile Meadow: add to it one Bushel of Earth from the Bottom of a Wood-Pile, and half a Bushel of old Cow-Dung.

Blend all these well together; and when they have lain some Time, fill with this Compost three large Pots.

Set each upon one of the Treffels, and let it be of such a Height, as that the Branch intended to be laid, will come down to it without much Force.

Bring down the Branch thus intended to the first Pot; open the Earth six Inches deep, and lay it in.

Observe where the Part to be covered is, and then let it rise again: tie a Piece of Iron Wire just above, and cut with a sharp Knife three long Slits in the Part that will lie cover'd.

After this pierce half a dozen Holes through, and then wet it with a strong Brine.

This done, lay it in the open Part of the Earth, and fasten it securely with Pegs, or by tying: cover it up five Inches with the Earth, and give it a gentle Watering.

The best Season of laying it is in the Beginning of *August*, for this is an Ever-green; and that is the proper Time for all such.

It is thus to be managed with every Branch that is laid, and the Top of each should remain about eight Inches out of the Ground.

From time to time the Earth must be gently watered; and the next Season the Branches are to be cut off from the old Plant, and the whole Earth of the Pot shaken out in a Lump with the Layer.

It is then to be placed in another Pot with more Earth of the same Kind; and the Shoot is to be kept in the Middle of the Pot.

It will thus require no more Care than is bestowed on common Plants of the same Kind, and will grow to be a handsome Shrub.

These Pots must be set out in the latter End of *May*, and taken into the Greenhouse in *August*; and every Year the Earth must be cleared away to a good Depth about the Roots, and fresh put in the Place of it.

With this Care, this Compost, and moderate but frequent Waterings toward the Season of their flowering: they will produce very large Bunches of Flowers of a surprising Sweetness.

A Layer or two should be placed under a south Wall in the natural Earth, at the same Time that others are set in Pots.

These will stand some Winters, though very severe

Sept. severe ones will destroy them; but so long as they bear the Exposure, they will grow more luxuriantly,

and flower in a much finer Manner than such as are hous'd, and for that Purpose potted. Sept.

4. BLUE CLITORIA.

Pl. V.
Fig. 4.

The Beauty and Singularity of this Plant equally recommend it to Attention. It is call'd in *English* the *Clitoris* Flower, from its *Latin* Name *Clitoria*; an indecent one; and so imperfectly expressive of the Flower, that it is neither fit, nor worthy to be translated; though, in Compliance with LINNÆUS, it be retain'd in the *Latin*. Some have call'd it *Phaseolus Glycyrrhizæ foliis*. LINNÆUS names it, *Clitoria foliis pinnatis*; *Clitoria* with pinnated Leaves.

It is a weak and climbing Plant: the Stalks are long, but slender; purplish at the Joints, when healthy, and elsewhere brown or green. The former is the Colour of the lower, the other of the upper Parts.

The Leaves grow with great Regularity and Beauty: five stand upon every Foot-stalk, and these rise separately and alternately at Distances on the Plant. They are singly, of a somewhat oval Shape, and are sharp pointed; they are plac'd in two Pairs, with an odd one at the End of the Rib: Their Colour is a fresh and elegant green, and they are high-rib'd.

The Flowers grow singly at the Insertions of the Leaves, one opposite to each, so that the whole Plant, when well manag'd, will be covered with them from Top to Bottom, at proper and equal Distances; and will thus make a very glorious Appearance. They are large, and of a most beautiful Sky-blue. The Fruit that follows is a kind of Pod.

This is the general Figure of the Plant.

The Flower, examined with a Botanical Attention, is seen to be of that Kind, call'd, from the Resemblance of a Butterfly, *Papilionaceous*.

It is form'd of four Petals, distinguish'd by peculiar Names: the upper one, call'd the *Vexillum* in these Flowers, is in this large and undulated: the two side Petals, call'd *alæ*, Wings, are oblong and rounded at the Ends. The fourth Petal, which is placed lowest, and call'd the *Carina*, is shorter than the rest, and rounded and falcated.

This is the natural Structure; and this, in general, is the Form of all *papilionaceous* Flowers; but Culture sometimes doubles that of the CLITORIA, in which Case it becomes yet more beautiful.

In this Flower stand ten Filaments, but in a peculiar Disposition; nine are united into one Body, and form a kind of Tube, split at its Top, where the other single Filament falls and hides the Opening.

These are the Characters of the Seventeenth Class in the LINNÆAN System, the Title of which is DIADELPHIA: it is form'd of two *Greek* Words,

and signifies those Flowers in which the Filaments are form'd into two Assortments.

The Reader has observed before, that when these Filaments are united into one Body, the Class is entitled MONADÉLPHIA.

The several Sections of the *diadelphous* Plants are distinguished by the Number of the Filaments; and this having ten, is one of the *decandrous* Kind. The Style is single; but it is not, in this Case, the Mark of any particular Division.

The Plant is a Native of the *Indies*, and is found wild in damp shadowy Places; therefore Reason directs that it should have, in our Hands, Warmth and Moisture.

It should be rais'd from Seeds, and they will succeed best, if had from the *Indies* gather'd in perfect Ripeness.

Culture of the BLUE CLITORIA.

Early in the Spring, let a Hot Bed be made in a careful Manner, using good Dung, spreading it even, trampling it well down; and, when of a due Temper, covering it eight Inches deep with the finest Garden-Mould, without any Addition.

On this Bed sow the Seeds, and cover them half an Inch with the same Mould; let them be scattered thin, and when they are covered, give the Bed a gentle Watering.

When the Plants are come up, let them be treated carefully and tenderly; and, when they are four Inches high, let them be transplanted into small Pots.

Let these Pots be fill'd with the richest Garden-Mould, that has been well improv'd by Dung at this Time rotted and well blended with it.

Let one Plant be carefully set in each Pot, and gently water'd.

Let these Pots be plac'd in a Bark Hot-Bed, and there kept with the same Care, defending them from Cold, letting in a little Air, and gently watering them.

When they have thus obtain'd some considerable Strength and Bigness, let larger Pots be prepar'd for them: into each of these put first some of the same rich Earth; and then loosening the Earth in each little Pot, get it out in a Lump.

Trim off the Fibres that hang round the Surface; set the Whole upright in the larger Pot, and fill up with Earth. Place these in a Bark-Bed again, and shade and water them till they have taken good Root; then remove them into the Stove in a fresh Hot-Bed of Bark, and let them be carefully water'd. Thus they will flower as beautifully as in their native Soil.

Sept.

Sept.

5. GOLDEN CASSIA.

Pl. V.
Fig. 5.

This is a Plant of extreme Prettyness. The regular Growth of its Leaves gives it a singular Elegance; and, when the Flowers appear, their golden yellow and elegant Form add greatly to its Beauty.

It is called in *English* the *Dwarf Peacock Flower*, but that is an improper Name. The common Writers call it in *Latin*, *Cbama Crisfa Pavonis*; a Name from which the *English* one has been form'd. LINNÆUS properly refers it to the *Cassia*'s, and calls it, *Cassia foliolis multijugatis glandula petioli pedicellata stipulis ensiformibus*: *Cassia*, with Leaves compos'd of numerous Pairs, with the Glandule of the Foot-stalk rais'd on a little Pedicle, and with the Stipulæ form'd as Swords.

It is a long Name, but fewer Words would not so well have express'd its Distinction from some of the other Kinds.

The Plant is two Foot and a half high. The Root is compos'd of small long Fibres: The Stalk is round, upright, downy, and full of Pith. It is branched usually from the Bottom, and well covered with Leaves.

These are beautifully pinnated: each is compos'd of about twenty Pairs of small oblong Pinnæ; and their Colour is a fresh and fine green.

The Flowers are large, and of a bright gold yellow, and they are very numerous; they stand opposite to the Leaves, or often in the Intervals between them; and they are plac'd on short Foot-stalks, on each of which there grows also a single sharp-pointed Leaf, altogether different from the others.

After the Flowers come Pods, in which there

are large black shining Seeds.

When the Flowers are carefully examined, each is found to be plac'd in a small five-leav'd Cup, which is of a tender Substance, and falls with the Petals.

The Body of the Flower is compos'd of five Petals: these are large, oval, hollow, and irregular in Size; the two lower being larger, and plac'd distant from the rest. In the Centre stand ten Filaments; which bend, and, turning upwards, have given Occasion to suppose a Resemblance between this and the *Crisfa pavonis*, or *Poinciana*. In the Centre of the Threads rises a single short Style.

This Structure of the Flower shews plainly to what Class in the LINNÆAN System it belongs: The tenth, named *Decandria*, from there being ten Male Parts in every Flower, claims this; and the Style being single, shews it one of the first Section, *Monogynia*.

It is an annual Plant, a Native of some of the warmer Parts of the *West-Indies*, and naturally grows in a deep rich Soil.

Culture of the GOLDEN CASSIA.

Early in Spring let the Seeds be sown on a good Hot Bed, covered deep with rich Garden-Mould. When the Plants come up, let them be allow'd Time to get some Strength, and then be remov'd to another Hot-Bed, to bring them forward: after which they are to be planted in Pots, and treated as the other tender Annuals we have named; till they are brought to flowering.

6. SCARLET ANTHOLYZA.

Pl. V.
Fig. 6.

This is an extremely beautiful Plant; and has withal a Singularity that attracts every Eye, and never fails to please.

Its *English* Name is *Æthiopian Corn-flag*, but this is a very improper one. COMMELINE calls it *Gladiolo Æthiopico similis planta angustifolia caule hirsuto flore rubicundissimo*. Its proper Name is *Antholyza flamine unico declinato*: *Antholyza*, with one of the Filaments bent.

The Root is large and fleshy. The Leaves are of a singular Form and Structure: they are long, narrow, sharp-pointed, rib'd length-wise, and in all Respects of the Kind we call *Grassy*; but that they have short Foot-stalks: from these they rise hollow at the Base, and grow broader as they continue their Course, to a third Part of the Length, whence they grow narrower again.

The Stalk rises in the midst of these, and is round, hairy, and a Foot and half in Height.

The Flowers grow in Clusters from the Sides of the Stalk; they are plac'd on short Foot-stalks, surrounded by some small membranaceous Leaves at the Base.

They are very large, and of extreme Singularity

as well as Beauty. Their Colour is on the Outside a very elegant pale red, and a deep Blood-red within. They are very long, large, hollow, and have an upright Lip.

The Seed-vessels are three-corner'd; and the Seeds are numerous and large.

This the common Observer sees; but to the Botanical Student no Flower demands more particular Attention.

It has no Cup beside the few irregular Leaves before nam'd, which serve to separate the several Flowers that grow in the same Cluster.

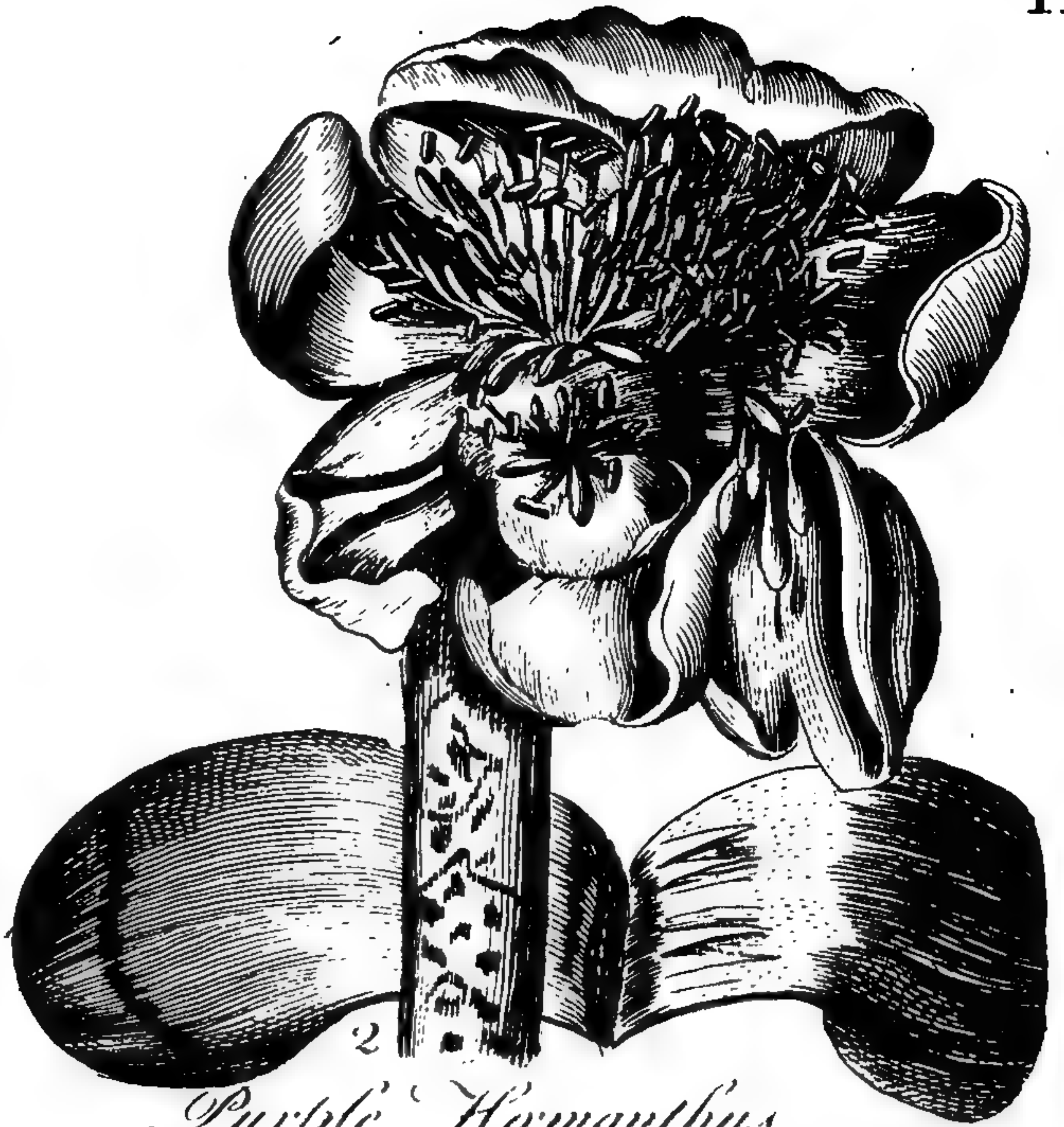
The Body of each Flower is form'd of a single Petal: this is small and tubular at the Bottom; it thence rises to a considerable Height, extending all the Way in Breadth; but it is not in this Part rounded, in Manner of a Funnel, but flatt'd; and at the Top it forms a kind of gaping Mouth, compos'd of two ver irregular Lips.

The upper Lip is long and narrow, undulated, and strait, and has two small Segments at the Base. The under Lip is short, and is divided into three Parts.

In



1
Ceylon Pancratium



2
Purple Hermanthus



3
Azorian Jasmine



4
Blue Vitoria



5
Golden Cassia



6
Scarlet Antholyza

Sept.

In the Body of the Flower are lodged three Filaments: they are very long and slender, and are terminated by pointed Antheræ.

Two of these follow the Course of the upper Lip, and one is placed in the lower. The Style is single, and is placed with the two upper Filaments, and at its Top splits into three capillary Segments which turn downwards.

The extream Singularity of this Flower will not prevent the Student from very readily perceiving to what Class in the LINNÆAN System it belongs.

It is one of the Triandria, those which have in every Flower three male Parts; and from the Style being single, he sees it is one of the Monogynia.

It is a Native of *Africa*, and grows there in Sands near Rivers. This shews what is its proper Culture.

The Roots which bear to be kept without Damage a considerable Time out of the Ground,

are to be obtained from their Place of Growth, and about *June* put into a light rich Earth in large Pots.

The best Compost will be this. Mix equal Parts of fresh Mould from a Pasture, common Sand, and the Earth from under an old Wood-Pile.

With this fill the Pot about two thirds; then place in the Root, and put in more of the same Soil carefully, till it is covered an Inch deep at the Top.

Give it a gentle Watering, and set in a warm sheltered Place. In *August* the Leaves will appear: it must then be removed where there is more Sun, and watered lightly every Day.

In *September* it should be set into a Stove, and allowed a temperate Heat, and still be moderately watered.

This Conduct will not fail to bring it to flower in all its Beauty.

~~CHAP. II. THE CARE AND CULTURE OF THE PLEASURE-GARDEN, FOR THE LAST WEEK IN SEPTEMBER.~~

CHAP. II.

The Care and Culture of the PLEASURE-GARDEN, for the last Week in September.

LET the Gardener begin this Week by going over his Ground, and seeing carefully whether any thing be omitted that should have been done in the preceding.

Let him see whether all his Layers have been removed from the old Roots; for if not, it must not be deferred now.

If it be any longer omitted, there will be Danger of their being lost. The Frosts will soon come on; and these will prevent their rooting, if that be not done pretty securely before.

Let him look if there be any Gap or Deficiency in the Borders planted from the Seminary; and if there be, let him fill it now for the same Reason.

Let him in this last Round see that every Part has its Plants for the succeeding Year's flowering. Having done this perfectly, and scattered a little rotten Dung mixed with fresh Mould upon the Surface of the Borders that most wanted Refreshment, he may so leave them to Nature.

This, which is the common Management of the Borders, being over, let him return to the Care of his more choice and delicate Flowers.

We have instructed him to prepare a Soil for Hyacinths, that will bring them to a Perfection altogether unknown to his Neighbour's Flowers of the same Kind; and we are now to shew him the Manner of using it.

A Bed of proper Size for the Quantity of the Roots is to be made two Foot and a half deep,

and a Quantity of the same Soil reserved for covering the Roots.

When the whole Bed has had Time to settle, smooth the Surface to an exact Level, which is to be about an Inch higher than the common Ground, and draw Lines along it; the first at six Inches Distance from the Edge, and the others at nine Inches one from another.

When Lines are thus made along the Bed, let others be made at nine Inches Distance, cross-wise of the first.

The Bed will be thus divided into so many regular Squares, and in the Centre of each Square is to be placed one Root.

Let the Gardener take Care that he set the Root exactly upright: then let him draw a little of the Mould about it to keep it steady; and when they are all placed with this Care and Regularity, let him lay in the Earth reserved for that Purpose, covering them four Inches and a half deep.

Great Care must be taken that this Earth is laid in lightly and evenly, not to displace the Roots; for we have shewn the Gardener before how great a Disadvantage it is to a fine Flower, to have the first Shoot made irregularly.

The Top of the Bed should be a very little raised: about two Inches is rounding enough in a Bed of four Feet; and when all is thus done, they are to be a little assisted in unfavourable Weather.

When

Sept. When Roots are thus planted that have been some Time out of the Ground, they at once either shoot or decay.

The necessary Ingredient for their shooting is a little Wet; and if Nature do not supply this, Art must.

The Beds should be regularly and gently watered once in four Days, if there be not Showers. They will by this Assistance make the first Shoots of their Fibres; after which there is no Danger of their Decay.

They will require to be a little sheltered when the severe Frosts come on; but that we shall consider in its proper Place.

The Gardener who has observed our Directions in the preceding Numbers, has now his Beds for Tulips, Ranunculus's and Anemonies ready: for the Roots the Ground is settled, and they may be planted without Fear of Accidents.

Let him begin with the Ranunculus's and Anemonies, for they require the same Management.

For this Purpose let him draw off three Inches Depth of Mould from the whole Surface of the Bed, and then make the Top perfectly level.

This done, let him give it a gentle Watering; and when it has had two or three Hours to dry the Surface, let him draw Lines length-wise and cross-wise of the whole Bed, at eight Inches Distance every Way from one another.

The common Writers on Gardening order these Roots to be planted at four Inches Distance: and Mr. MILLER, who, in one of his Publications, orders this four Inch Method, in a succeeding one directs six Inches.

The Gardener does not know what Rule to follow, when this sovereign Instructor contradicts himself: but we shall tell him, that in both these Directions he is wrong.

The Ranunculus's and Anemonies of our neighbouring Countries greatly exceed our own; and it is principally owing to the greater Distance they allow the Roots.

We follow them slowly and imperfectly: at one Time they excell'd us in the Colours of their Flowers, because they raised them from Seed; and we propagated them only by Off-sets from the Roots; thus debarring ourselves from the great Source of Variety.

We have now taken their Method of raising the Plants from Seeds, and we shew Flowers as finely coloured, and of late some better than the best of theirs in this Respect: but while we exceed them in the colouring of some, they beat us in the Strength and Boldness of all.

The Occasion of this is, that they allow a greater Space for the Roots to extend.

We have explained this at large to the judicious Gardener, that he may see the Reason of our Practice; and we shall add, that the most common Eye will give the Preference to the ge-

neral Appearance of a Bed of either of these Kinds where they are at eight Inches Distance, to one in which they are at four. Sept.

They may be crowded in a Nursery; but when they are planted out for Shew, this Disposition should always be observed.

The same Quantity of Roots by this Means covers a double Space of Ground, and has a ten-fold Beauty: The Obstinacy of some Gardeners will not perhaps suffer them to receive Information; for long Custom in a wrong Method, has made them think it right: but to the more Intelligent we appeal against these vulgar Errors, assuring them, from Experience, of the Success of what is thus dictated by Reason.

The Culture of Plants was very little understood, when these small Distances were assign'd to Roots of Flowers; and the Improvements and Advances have been made in vain in this Science, if dreaming Writers will still lead the Gardener into the old ill-understood Tract.

The Beds being thus marked into eight Inch Squares, let good Roots be picked out, and placed one in the Centre of each Square.

Let them be set perfectly upright, and an Earth drawn about them, to keep them steady: then let the Soil, taken off the Bed for that Purpose, be carefully laid on, and the Roots thus covered to two Inches and a half deep.

Let the Bed be finished with a small rounding; and if the Day be not showery, let it be gently watered.

Care being taken of these several Roots, there remain only the Tulips to be planted.

The Beds are ready for these, but there requires a peculiar Method of setting them.

They are Bulbs, and must be planted deep. The Earth must be drawn off from the Top of the Tulip Bed seven Inches thick, and the Surface perfectly levelled.

A little sprinkling of Water is then to be given; and when the Top is dry again, it must be marked out into Squares.

The Lines for this Purpose must be drawn at seven Inches Distance length-wise, and at eight Inches cross-wise; and one Tulip must be planted in the Centre of each Square.

The Bed being thus marked out, let one Root be placed, as in the former Instances, in the Centre of each Square, and the Earth drawn up about it to keep it steady.

One Direction serves for all these Cases; for the Business is the same; to place the Roots regularly and to keep them upright. The principal Difference is their Depth and Distance from each other.

When the Roots are all placed, the Soil that was taken off is to be carefully laid on again, and the Bed thus raised about six Inches above the Tops of the Roots: it must be finished a little rounding, as the last, and if the Day be not showery it must be watered.

Sept.

Sept.

C H A P. III.

Of the Management of the Green-house and Stove.

TH E Buſineſs of the Greenhouſe for this Week is to clean and prepare it for the Reception of the Trees and Plants, which have ſtood out during the Summer : and Advantage is to be taken of ſome dry Days to bring them in.

The tenderer Kinds are to be taken in firſt, and they ſhould be placed near the Front ſome Time, before they are ſet where they are to ſtand the Winter.

The great Care is to bring them in before the Cold has affected them, and when there is no Wet upon them : in either of theſe Caſes the Leaves will flag and loſe their Colour ; and they never recover this till the Seaſon of ſetting them out into the Air again.

The tender Exoticks, which require a Stove

Heat, muſt now be prepared for, and Bark Beds made for their Reception.

The larger Kind of Bark is to be choſen for this Purpoſe, becauſe it heats gently.

The Plants muſt be ſet in when the Warmth begins ; and the Bed muſt be watched and examined from time to time, to ſee that it does not acquire too violent a Heat.

When the Plants are removed into the Stove and the Green-houſe, the ſame Care and Management muſt be uſed : the Earth muſt be ſtirred a little at the Surface ; all dead Leaves muſt be taken off, and the Branches and Stems muſt be looked over, and cleared of Foulneſs and Inſects.

By this Means they will be rendered clean and vigorous for the Winter.

S E C T. II.

The Buſineſs of the SEMINARY, for this Week.

BO X E S of light rich Earth ſhould be prepared for receiving the Seeds of ſuch Flowers as are long in coming, this Way, to Perfection.

They will require no great Trouble during the Time ; and they will amply repay it, when they come to flowering.

All that is to be done now, is to level the Surface of the Mould in theſe Tubs, and ſcatter upon it the Seeds moderately thick.

They are then to be carefully covered ; and the proper Depth is half an Inch.

When the Earth is on, a very little Watering ſhould be given from a fine Pot, and a little

looſe dry Hay ſprinkled over the Top.

In this Manner the ſeveral Kinds of Iris Colchium and Sowbread will ſucceed.

Tulips, Fritillaries and Hyacinths muſt be ſown in the ſame Manner ; but they muſt be covered an Inch deep with Mould.

On the contrary, Ranunculus and Anemone Seeds muſt not be covered above a quarter of an Inch ; and they muſt be ſown the thicker for this Reaſon, becauſe many of the Seeds will periſh.

The Boxes ſhould be placed in a warm Situation, but not under Shelter, and in dry Seaſons they ſhould be gently watered.

S E C T I O N III.

P O M O N A, or the FRUIT-GARDEN.

C H A P I.

Fruits now in their Perfection.

TH E Fruit Seaſon is now on the Decline ; but there are yet the Remains of ſome excellent Kinds which we have named in the preceding Week's Number ; and ſome but coming in.

There are Peaches, Grapes and Figs ; the Nut Kind and the Medlar ; and there are alſo ſeveral Kinds of Pears and Apples.

Nº V.

Of the Peach Kind, the *Violet* is now in its full Perfection.

This is a large rich Peach. Its Shape is oblong, and ſomewhat oval. The ſunny Side is purple, and the other white.

There is alſo white Down very lightly ſcattered over the purple Part.

Q

The

Sept. The Pulp is melting, and its Flavour extremely sweet.

The *Admirable* is another Peach now in its full Perfection. It is an excellent Kind, and well worthy of its Name. It is very large, and in Shape perfectly round. The sunny Side is of a purplish red, and the other of a greenish white.

It is a firm Peach, but very well tasted; the Flesh is purplish, and it parts easily from the Stone.

The *Royal* is another of the Peaches of this Season. It is called also the *Pavie Royal*. It is a very large round Peach, and is red all over, except a small white Part next the Wall.

On the sunny Part it is deeper, and on the rest paler.

It is of a rich Flavour, and the Flesh parts freely from the Stone.

The Colour in general is pale, but about the Stone it is red and bloody.

Of Grapes there is the *Mealy* or *Miller's Grape*, so called from the Mealy Covering of the young Shoots. The Grapes are round, and moderately large: they stand very thick in the Bunch, and are covered with a blue Tinct when full ripe.

The *White Muscadine* is also now ripe. This is a pleasant and well flavoured Grape; and when full ripe becomes a little yellowish. The Skin is thin, and the Seeds are small. It is a very wholesome Kind.

The *Royal Muscadine* must not be supposed the same with this; the Grapes are greener, and the Skin is thicker; but the Flavour is superior.

The *Pearl Pear* is now full ripe, and is an excellent Kind. It is small, but perfectly agree-

able: the Juice rich, and the whole Substance melting. The Shape is longish; and when ripe, the Colour is a pale yellow, with some Streaks of purple.

There is another Pear like this, but large. It is called the *Blanquet*; by some the *Great Blanquet*, these calling the other the small one. This is rich and melting, and its Colour is a deep yellow, with but little red.

The *Rose Pear* is now also full ripe. This is of a pale yellow, spotted with brown, and sometimes has a Spot of purple to the Sun. Its Shape is longish, and its Taste like that of Rose-Water, from whence it had its Name.

Of the Plum Kind, the *Verdock* is now very fine. It is a middle sized Plum, of a pale yellowish Colour, and dusted over with a pearly Meal. It is bigger than the Green Gage, a little longish, and marked with a Furrow on one Side. The Flesh is yellow and finely flavoured, and it sticks firmly to the Stone.

The *Roche Corbon* is another fine Plum: this is one of the red ones. It is purple to the Sun; of a whitish green next the Wall, and red between. It is covered with a blueish Powder when ripe, and is a very excellent Kind.

The Flesh is yellow, rich and juicy, and parts freely from the Stone.

The *Spanish Damask* is another very good one, but not equal to the two preceding. It is a round middle-sized Plum, red, and covered with a blue-grey Dust. The Flesh is of a greenish yellow, and parts freely from the Stone.

These are the principal Kinds to be expected this Week.

C H A P. II.

Of the Care and Management of the Fruit-Trees.

THIS is a good Season for propagating Gooseberry and Currant Trees: and if some hearty Showers fall, it will be proper not to lose the Advantage.

The common Method of raising these Trees is by Suckers; but they never grow to a tolerable Form this Way, without a great deal of Trouble.

We shall advise the Gardener to do it by Cuttings; and we may venture to promise him this Way better Success.

Let him take the Cuttings from the bearing Branches of some very thriving Gooseberry Trees. Let them be ten Inches long, and cut with Care. Let a Border be dug up and made fine for them; and let them be planted carefully four Inches deep.

Let the Earth be well settled to them, and give them a gentle Watering, repeating it occa-

sionally, if there be not Showers.

Shade them and defend them from cold Winds; and they will take Root before the Frosts; and establish themselves during the Winter; so that in the succeeding Spring they will shoot with Strength and Vigour.

The great Care while this is going on is to rub off the under Shoots, that the Shrub may rise with a good Stem: but this we shall speak of at the Time.

There should in every good Garden be a forcing Frame for early Fruits; and for such as have not this material Requisite, we shall in the proper Season give the Method of making it.

Supposing there is one, this is the Time of pruning and training the Trees.

As the Fruit in this Way is to ripen at a particular Time, all the Operations upon the Trees are also to be done at Times appropriated to that.

Sept. that. The Buds will be getting forward by this Means, and will be in a very good Condition of Growth, by that Time the artificial Heat is to be applied.

Another considerable Business of this Season is the gathering of Fruit: we have given Cautions on this Head respecting the Time; but there is another Article as little regarded by our common Gardeners, which is the Manner of doing it.

This is in some Respects general, as relating to all Kinds; and in others particular, as regarding the separate Species.

The first general Rule is never to gather them, but in their Perfection; and this is to be known by their Colour and Surface.

The Vulgar have a Way of trying by pinching them; but this is a very ungardener-like Method; and is not necessary.

When Plums are ripe their Colour is bright and fine, and the mealy Powder lies full and yet light upon them.

The Way to gather them is to touch them very lightly, so as not to rub off the Bloom; and then having ever so little Hold, the smallest Twist takes them from the Stalk.

Sept. Never give them a second if the first does not loosen them: for in that Case they are not ripe, and should be left on a Day or two longer.

The same Rule holds for the Peach; if the least Twist does not bring it off it is not ripe: and this is a Fruit that never should be gathered till it is perfectly so.

To know whether Grapes be ripe, observe their Skin and Colour. When they are ripe they are very clear and transparent; and they never are so till then: therefore this is an unerring Rule.

In examining a Bunch Regard must be had to the greater Number of Grapes upon it; for they never all ripen together. When this large Part are thus transparent let the whole be gathered, and let the unripe ones be taken off, as also any damaged Berries; before they are sent to the Table.

Pears require a different Management; for they should always be gathered three or four Days before they are ripe. They will ripen very well in lying; and if they are left all the Time upon the Trees they grow mealy.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

CHAP. I.

Products of the Kitchen-Garden now in their Perfection.

WE shall not carefully inform the Reader that he may now have Cabbages and Carrots. This is a Sort of Information which none can need: we therefore leave the Recital of it to Writers of another Class.

But beside these, and the other Products sold at every Herb-Stall, the better Kind of Gardens now afford the Netted and the *Portugal* Melons in great Perfection. The first Kind is known by the great Quantity of Net-work on the Outside, and the *Portugal* by its Smallness, Roundness and delicate Smell.

Mushrooms will be afforded from the Beds in Plenty, and there may be a great many ga-

thered small; for there will be a sufficient Supply for larger Growth.

The great Parsley Root continues good: and the Black *Spanish* Radish, of which some are fond, is in great Perfection. Gourds and Squashes are also in Order for Soups; and for such as are fond of it, the Chard-Beet.

This is a Time when the Rocambole is in great Perfection. Fenchia also continues fine; and there will be, with good Management, some very good Cabbage-Lettuces on the warm Borders. There may also be small Salletting for such as approve it at this Season, by frequent Sowings and good Care.

CHAP. II.

The Care and Culture of the Kitchen-Garden.

WITH the last Article nam'd among the Products of this Season, we may begin the Chapter of Business; for young Salletting is of

a quick Growth, and may be continued yet some Time.

For this Purpose, chuse now a South Bed, under

Sept. der a Wall; and sow the Seeds deeper than at other Times. Turnep, Crefs, Mustard and Radish, are the four best Kinds; their Mixture makes a very good Sallad, and they will, with this Care, thrive very well. If they should be sown shallow, or more expos'd, the Frosts would loosen their Roots, and they would come to nothing.

Let the Gardener's next Care be the refreshing his Asparagus Beds.

The old Stalks are to be cut off, and laid by in Heaps, and the Weeds are to be clear'd away with them. When the Beds are thus clean'd, let the Surface be stir'd with a Hoe and Rake, and spread over it a moderate Covering of the old Dung from one or more of the Summer's Cucumber-Beds. Then pare the Alleys between the Beds, and break the Earth, that is taken off, fine: strew this over the Beds upon the old Dung, and give all a gentle Watering.

The Beds being thus taken Care of, some Use may be made of the Alleys.

Let the Heaps of Weeds be dug in and well covered, and these will serve as a Manure.

Alleys lying low between the Beds, will be a fine sheltered Spot for some Colewort Plants. These will be very secure; and being planted at three Foot distance, in a single Row in each Alley, they will have abundant Nourishment, without doing the Asparagus any Harm.

They will stand those Winters which destroy the common Crops; and they may be taken away before the Time of the Spring-dressing of the Beds.

Let a Piece of Ground be well chosen for a Crop of Beans and Pease: it must be defended from Cold, and open to the South Sun. Dig into this some Sand and Coal-ashes; and then plant it half with Beans, and sow the other half with Pease. If these stand the Winter, they will come in at a fine Season; and they will be the more like to do it, for this Practice of digging in the dry and warm Ingredients. It is a Practice known to few, but it is founded on the plainest Reason.

There is nothing gives the Frosts such Power upon the Kitchen-Garden Crops, as Wet. It is found universally, that when other Things are alike, those Herbs planted in dry Places survive the Frosts, which kill those on wet Ground. This is an artificial Method of rendering the Earth less able to clod and crack about them.

In a Garden well manag'd in the Article of Sowing, there will be Cauliflowers now beginning to get Heads. These require Care, and they will come to Perfection at a Time when they will be very valuable.

They should be now defended from Sun and Rain; and yet there is a Necessity of their having a free Air. The Rains will rot them; and the Sun, while it brings them forward, will make them yellow.

The Method to keep them sound and white, is

Sept. to cover them with their own Leaves. The inner Leaves should be crack'd at the Rib, and bent down over them; in this Condition they will be shadow'd, and yet have Air enough; and they will grow quick and finely.

Broccoli should now be in a promising Condition; and due Care being taken of it, there will be after this little Danger. The same good Growth that forwards it at this Time, exposes it more to the coming Frosts; to protect it from these, and at the same Time encrease its Vigour, proceed thus:

Break the Earth between the Plants, very thoroughly, to the Depth of five Inches, and draw a good deal of it about their Stalks. The two Advantages arising from this, are obvious: the Earth is broke, and by that rendered fitter for nourishing the Plants; and their extreme Roots are broken off; and therefore there is a new Parcel form'd for spreading in it. At the same Time that their Stalks are defended and supported against the Severities of the Weather.

Two Cautions are to be us'd in doing it: the first is, to chuse a good Day, when the Earth is dry; and the next is, to pile it up to a due Height, without Damage. If the Heart of the Plant be cover'd, it is destroy'd instead of being preserv'd.

The Mushroom-Beds, made as we lately directed, continue producing abundantly; but they must be defended from the approaching Cold and Wet. The Frosts will prevent the shooting of the Mushrooms, and the cold Rains will rot the Spawn.

Some, for this Purpose, cover them with Frames and Glasses; but this, though a very safe Method, is not a good one. The Beds produce in Abundance by this Practice, but the Mushrooms will be bad.

We have observed before, that the Bed Mushrooms are inferior to those of the Field: and these are worst of all; the smother'd Vapour of the Dung gives them a nauseous Flavour.

The Farmer shews the Gardener what he should do in this Case; the same Caution by which he defends his Stacks of Hay, will answer in this Manner for the Mushroom Beds; that is the covering them with a Ridge of Thatch.

Let this be carefully laid on, made sufficiently thick, and brought down low enough, and it will answer all the Purposes; the Rain will be carry'd clear off, and the Frost will, for that Reason, have little Power.

In this Manner the Mushroom Bed will do its proper Office; it will produce in Abundance during the Winter; and that is a Time when they are not to be had from the Fields.

This is the great Use of these Beds; and the Mushrooms will be as well flavour'd as any rais'd on Beds can be.

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R VI.

For the Beginning of OCTOBER.

S E C T I O N I.

FLORA, or the PLEASURE-GARDEN.

C H A P. I.

Curious Plants and Flowers now in their Perfection.

I. Globular - flower'd GOMPHRENA.

Octob. **A** Sense of the Elegance in this singular
Pl. VI. Plant, has made it universal in our Gar-
dens; where it glows at this Season with its
Fig. 1. full purple, carrying all the Marks of Health,
when the Generality of the Vegetable Beauties are
decaying.

Its Name among our Gardeners is the *Globe A-
maranth*. The common Writers call it *Amaran-
thoides*; and some with us, the *Everlasting Flower*.
This Name has been given it from the Time
the Flowers will retain their Lustre. The *French*
have call'd it, for the same Reason, *L'immortel*,
The never-dying Flower.

Names form'd from those of other Plants, with
which such as call'd by them are thought to have
some Resemblance, are justly rejected in the pre-
sent improv'd State of Botany; therefore the for-
mer Denominations of this Plant, *Amarantho affi-
nis*, and *Amaranthoides*, are disus'd, and it is di-
stinguish'd by a Name appropriated to it, and
given to no other Genus; this is *Gomphrena*.
By way of Distinction from the other Species of
the same Genus, LINNÆUS calls this, *Gomphrena
caule erecto foliis ovato lanceolatis, capitulis solitariis
pedunculis diphyllis*: that is, upright *Gomphrena*,
with pointed oval Leaves and single Heads, with
two-leav'd Pedicles,

Numb. VI,

Those who are not acquainted with the Nature of Octob,
our Science, will exclaim or smile on reading such
a Name; but they are to be told, its Length is
needful to distinguish the Species from all others;
and that it has its Merit with the Prolixity, for
it contains an absolute Description of the Plant.
Ours may be shorten'd from the Particulars con-
tain'd in this.

The Root is fibrous, and the Plant rises to two
Foot in Height. Its Stalk is full of a snow-white
Pith, branched, round, and of a pale whitish Co-
lour, often spotted with Purple near the Ground,
naturally purple at the Joints, and covered with
a light white Hairyness.

The Leaves are plac'd naturally in Pairs at di-
stant Joints; but luxuriant Nature, when we give
the Plant good Culture, often exceeds that Num-
ber. They are supported on short Foot-stalks,
and they are whitish on the upper Side; and on the
under of a light pale green.

The Flowers are numerous, and of an uncom-
mon Lustre: they terminate the Branches in round
Heads; and often others rest in the Bosoms of the
Leaves.

These Heads are form'd of glittering purple
Scales, firm to the Touch, dry, oblong, and
pointed; and from among these Scales burst out
the

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Octob. the proper Flowers: they are little and white; and their Form is starry. The Seed follows. One after every Flower, wrap'd in a Bed of snowy Cotton.

What is usually understood by the Name of the Flower of this Plant, is the whole globular Tuft or Head. 'Tis this that has obtained for it the Names of Never-dying, and the Everlasting Flower: the dry Construction and polish'd Surface of the Scales, keeping them in their original Brightness a long Time.

The Student having thus far examined the general Form and Structure of the Plant, desires to know its Class in the LINNÆAN System: for this he must consult the separate Flowers, as well as the general Head.

Let him pull to Pieces one of these Heads, and he will find each little Flower plac'd in its distinct Cup. This is flattened, and compos'd of three little Leaves; two of the three are hollow'd, and have their Sides convergent; the third is less, and is plac'd side-ways.

The Body of the Flower, form'd of a single Petal, is divided to the Base into five Segments: these are sharp-pointed, and they give the starry Figure.

Within the Body of the Flower he will perceive a tubular Piece of a Cylindric Form, and equal to the Hollow of the Flower in length: this is a singular Part, and it appears the more so from the Smallness of the rest.

We have inform'd him, that whenever he finds in a Flower some Part beside the Petals, and the Organs of Fructification, it is the *Nectarium*.

This little Flower has it so large and so conspicuous; and, when examined near the Edge, it is found to be divided regularly by ten Denticulations.

The Mouth of this tubular Part is clos'd by a complicated Button; but this, tho' placed in it, does not belong to it. 'Tis compos'd of five distinct Parts, and these are the Antheræ of the Flower. They stand upon five Filaments, which are almost too small for Sight, and rise within the Neck of the *Nectarium*.

These are the five Threads which give the Class of the Plant. Tho' small they are regular; and therefore it is to be refer'd to its Place, according to their Number: and the Student remembering what has been said already on that Head, will know *Gomphrena* to be one of the *Pentandria*, the Fifth Class of LINNÆUS.

Within the Flower, and below the Filaments, is placed the Rudiment of the future Seed. From this rise two Styles; therefore the Plant is one of the second Section, the *Digynia*.

It is a Native of the *Indies*, but it succeeds perfectly well in our Gardens, with the common Culture of our annual Plants.

We propose Improvements, not retailing ancient Imperfection; and we shall tell the Gardener how he may raise his *Globe Amaranths*, as we suppose he will continue to call them, to a larger Size, and cover them with much more numerous Flowers: how he shall stain, with living Purple, the Joints of the Stalk, and spot its Base with Crimson.

Culture of the GOMPHRENA.

Octob.

The bringing this Plant to Perfection depends upon three Articles; 1. The having good Seeds. 2. The getting the Plants forward early in Spring; and, 3. The giving them their Summer Growth in a good Compost.

The second Article our Gardeners perform tolerably well, for it is mechanical: in the first they are negligent; and of the other altogether ignorant.

It is therefore no Wonder that a Plant, which astonishes the Eye with many hundred Flowers at once, spread over its diffus'd Branches in its native Climate, here raises scarce more than a single sickly Stem, and with Difficulty throws out a Dozen or two of Flowers.

Its Beauty is so inherent, that Ignorance and Neglect together, cannot deface it utterly: but all the curious Eye will discover from what it discloses in the common, will be to what Perfection it may be brought by better Management.

The Seeds are of two Kinds, those brought from the *East-Indies*, and such as are produced here.

The first are preferable highly. They are procur'd from healthful Plants; the others are, at best poor, and are often ill ripen'd. Late Sowing, or careless Exposure at the Time of their Ripening with us, frequently renders them of little Value.

First then let our curious Gardener get his Seeds from the *East*; they are common there, and our Trade thither renders it easy to obtain them fresh enough for sowing.

These Seeds being obtain'd, in the Beginning of *February* let a Hot-Bed be prepar'd for their Reception; and at the same Time an artificial Soil made for them when they come to be planted out. Our Gardeners set them in the Borders as they chance to be, damp or dry, light or heavy; and they succeed accordingly. The true Method is this.

Throw in an open Spot of Ground two Loads of common under-turf Earth, taken from an upland Pasture, where the Soil is dry and somewhat sandy, but not barren; add to this a Load and half of common Garden-Mould, that is, Earth enriched with rotten Dung: and add afterwards two Bushels of clean Coal-ashes, and a Load of Sheeps-Dung picked fresh from a Common.

Dig and stir all these well together, and leave them to the Sun, Air, Rains, and Dews; take Care no Weeds grow on the Heap to exhaust its Virtue; and thus leave it till it is wanted.

Let the Hot-Bed be well covered with common Mould. Sow the Seeds, by scattering them from the Hand thinly and evenly, and sift over them half an Inch of fine Mould. Cover the Bed close, and take Care it is kept warm.

Here leave them to Nature, and patiently expect their shooting. They are idle Writers who presume to fix a Day for the Appearance of the Plants. This depends on Accidents, never twice the same; the Newness of the Seeds, the Heat of the Bed, the Depth of Mould, and the Moisture of the Dung.

When they appear, they will soon get Strength and

Octob. and Bigness, and a new Hot-Bed must be prepared for them. Let this have seven Inches Depth of Mould, for the Roots pierce deep, and Dung hurts them. On this Bed draw Lines at five Inches Distance, length-way and cross-way; and in the Center of each Square, made by these Lines, place one of the Plants.

Raise them gently from their first Bed, not with a Finger, as some direct, but with a hollow Trowel, and leave the Holes open to receive them.

Set them upright, fix the Mould well about them, and give them a very light and gentle Watering.

Give them Air as there may be Occasion, and repeat the Waterings. They will thus grow up briskly; and at the End of about four and twenty Days they will be ready for their third Hot-Bed.

This must be larger than the others, and covered with a deeper Frame. Its Mould must be nine Inches thick, and the Heat moderate.

Here the young Plants must be set at about eight Inches Distance; water'd at first, and afterwards expos'd gradually to the Air.

It will now be Time to prepare the Border for Octob. them. Let the artificial Soil, already directed, be laid, a Spade and half deep, either in an entire Border, or in the Places in other Borders where the Plants are to stand. Let them be carefully removed into this, after Sun-set, in a dripping Season, and shaded till they have taken Root.

Gentle Waterings will from Time to Time be needful, and they will thus rise to a Yard in Height, spread out forty or more Branches from a Root, and be covered with a Profusion of Flowers, larger and of a finer Colour than those rais'd any other Way.

This Care is worth employing, because of the Duration of their Flowers. They will not only be full of Beauty in the Ground, all this and Part of the succeeding Month, so long as Frosts are gentle, but being gather'd in their Prime, they will retain their Beauty a vast while, and serve in the Places of artificial Flowers, in Ornaments, Deserts, and all the other Uses of those Things, exceeding every Thing, that has come from the Hand of Art, in Beauty.

2. OVAL-LEAV'D ROSE HIBISCUS.

Pl. VI. We have recommended to the Attention of the
Fig. 2. Curious, in a preceding Number, a Species of *Hibiscus*, call'd, from the Multiplicity of Petals and Bigness of the Flower, the *China Rose*.

This which we here propose to their Regard, is little inferior to it in Lustre; and from the same Cause has been also called the *Rose of China*.

BREYNIUS calls it the Tree *Alcea*, of Java, making it a Kind of Vervain Mallow.

LINNÆUS justly ranks it with the *Hibiscus*, and names it, *Hibiscus foliis ovatis serratis acuminatis glabris caule arboreo*: that is, Shrub *Hibiscus*, with smooth, sharp-pointed, oval, and serrated Leaves.

It rises to six or eight Foot in Height a spreading Shrub.

The Root is fibrous and insipid; the Trunk is covered with a brown rough Bark: the younger Shoots are grey and smooth, and their inner Bark is green.

The Leaves are numerous, and of a handsome Shape; they have long Foot-stalks, and their Colour is a pale but elegant green; they are grossly serrated at the Edges, and soft to the Touch.

The Flowers are very large and beautiful; they terminate the Branches, and their Colour is a fine strong red: they are naturally double, and the numerous Petals which compose them, are curl'd and wav'd at the Tops and Edges.

Each Flower has a double Cup. The outer whitish, and the inner green. The internal Part resembles that of the *Mutable Hibiscus*; the Filaments being connected in the lower Part, so as to form a kind of Cylinder, and their Buttons numerous; these are yellow, and the Divisions of the Style are crimson.

The Structure of these Organs shews it to be of

the same Class with the other *Hibiscus*, and of the same Section; it is another of the *Monadelphia Polyandria*. The Filaments being connected at their Base into a single Body, and their Buttons numerous.

This we have explain'd under the before-nam'd Article, and need not repeat it here.

The Shrub is a Native of the *East-Indies*, and is one of the finest and most valu'd of their gay Productions. The Flowers are not less conspicuous for their Number, than their Size and Colour, and they there cover the Branches throughout all the Year.

With us it must not be expected to attain this Degree of Perfection; but we may raise to so much Excellence as to eclipse most of our Stove Plants.

Its Culture needs not be set down at length, for it must be the same with that of the other *Hibiscus*; we therefore refer for this, as for the Explanation of its Class to our second Number. When it shall have been once established among us, the Method of propagating it must be by Layers; for it very rarely ripens its Seeds in the *Indies*, and cannot well be expected to bring them to the due Perfection here.

This is one of the Species we recommend to be introduced as an Addition to our common Stove Plants. We have been long accustomed to see its Figure in the China-Paintings; and some have thought it, as they did the other, the Product only of the Designer's Fancy; but a better Knowledge of Things has now shewn us that it is Nature; and there are at this Time several Plants of it rising in our Gardens.

3. AFRICAN

Octob.

Octob.

3. AFRICAN GOLDEN SAGE.

Pl. VI. We lay here before the Reader a Shrub that Fig. 3. was early introduced into the Gardens of *Holland*, and that deserves a Place in every one of ours, where either Singularity or Beauty are regarded.

The Gardeners Name for it is *Shrub Sage*, or *Yellow African Sage*. COMMELIN, who raised it in the *Amsterdam Garden*, calls it, *Salvia Africana frutescens folio subrotundo glauco flore magno aureo*: and LINNÆUS, in his *Hort. Cliff.* and VANROYEN, in his *Lugd. Salvia foliis subrotundis integerrimis basi truncatis dentatis*: that is, Sage with rounded entire Leaves, truncated at the Base and dented.

It is a wild and irregular shrubby Plant, of a Yard or more in Height. The Root is fibrous, and the Trunk is brown.

The young Shoots are square and green; but as they grow older they lose that Shape and Colour, becoming round and of a pale brown.

The Leaves are numerous, and they stand in Pairs, crowded with Rudiments of young ones. They are short, broad, of a thick firm Substance, and a blueish green.

The Flowers are large, conspicuous, and beautiful. They are disposed in short Spikes on the Tops of all the Stalks; and their Colour is a shining gold yellow. The Cup is large; and in this, after the Flower is fallen, the Seeds stand naked.

This is the general Aspect of the Flower, into the internal Part of which the Student is to look to know of what Class it is in the LINNÆAN System.

Searching for the Filaments he will find them only two: and the Disposition of these being equal, he knows, from the general Rules laid down already, that it is by their Number he is to judge of its Place in the modern System. The second Class of LINNÆUS is named *Dianthia*; that Term expressing Plants in whose Flowers the male Parts are two.

The Structure of these Filaments is very singular. Each is split into two Parts, which stand wide asunder: one of these is longer, and lies under the upper Lip of the Flower; and on this Part of each Filament stands the Anthera or Button, not on the other; that having only an obtuse Appendage.

These Buttons are the Part which serve for the Impregnation of the Seeds; these therefore are to be regarded; and those Portions of the Filaments which carry them; not the other, in an Enquiry after the Class of the Plant. But now we have taught the Student not to be misled by their Form, we may explain a farther Singularity relating to them.

Mr. RAY, and many other Writers, have brought into one Class all the Plants which have labiated Flowers; that is, such as have, like this of Sage, the Flower of Lavender, and the like, a Division into two Parts, somewhat resembling two Lips.

LINNÆUS, who has not followed these common Marks in his Distribution, but founds his Method on the internal Parts, classes these labiated Kinds in general among his *Didynamia*, or those in whose Flower two Stamina or Filaments are longer, and have more Efficacy than the others.

Thus in the Flower of Lavender there are four Filaments, two of which are longer than the other two; and so almost universally among the labiated Plants.

Sage is an Exception to this Rule, and has, as we perceive in the present Instance, only two Stamina; but the Uniformity of Nature in the smallest Parts is very observable, even in this Variation; for Sage, which has only two Filaments in the Flower, has those split so that each seems double; one of the two Branches of each is shorter than the other, and has, instead of a regular Anthera, only a useless Appendage.

Culture of the AFRICAN GOLDEN SAGE.

This is one of those shrubby Plants that bear our Summers in the open Air, but require the Shelter of a Green-house against the Severities of Winter.

We have it in some Gardens; but the indifferent Appearance it makes, flowering seldom and that poorly, and being usually covered with dead and decaying Leaves, occasions it to be less regarded than it deserves.

This is not the Nature of the Plant, for it is luxuriant and lively in its native Soil; nor is it limited to that Climate for enjoying its Vigour; it is strong and healthy in the Gardens of *France*, and flowers in *Holland* all Autumn, as well as in its native Country.

Our Climate does not deny the same Advantage, but our Gardeners forfeit it by an unskilful Culture: in the Place of which we shall here propose a better, not from Imagination, but such a one as is founded on Reason, and confirmed by the Experience of the *French*, and more of the *Dutch* Gardeners.

The Plant may be raised from Cuttings, or from Seeds. Most Gardeners prefer the former Method, because easier, though they know the latter to be better.

They take the Cuttings from a starved weak Plant, for their Pots afford no better, and they plant them in a lean and hungry Soil.

By this Means the Plant, which had its Origin in Weakness, is starved into Decay; and at best produces a few scattered and faint Flowers: continuing weak for Want of Nourishment, and often infecting the neighbouring Herbs with its Decay.

This, like our ill Success in many other Exotics, is owing to the ill Instruction our Gardeners receive from Writings which they think authentic as the Gospels; and which, though we shall

Octob. not wantonly or ill-naturedly depreciate, yet when the Success of Gardening is at stake we shall not spare.

The Method to raise this Plant to its Perfection is this.

Procure Seeds from *France* or *Holland*, where the Plant ripens them well; or, if it can be conveniently done, from the *Cape of Good Hope*, where it is a Native.

Sow these in Spring, upon a moderate hot Bed; and at the same Time prepare for them the following artificial Soil.

Lay in a Heap two Barrows of Mud from the Bottom of a Pond; one Barrow of mellow Cow-Dung, and half a Barrow of common Earth, taken from under the Turf in a dry Pasture.

Sprinkle this Mixture with a little Brine, and let it lie to mellow.

When the Plants are risen, water them very carefully and gently at times; and when they have some Strength, remove them into a second, and afterwards into a third hot Bed, according to the common Method in that Culture.

When the Summer is advanced, and the Plants have good Strength, prepare some Pots for them.

Let these be large; and put into them some of the artificial Soil.

Set in each Pot one Plant: fill up with more of the same Soil, and settle the Earth to its Roots by a gentle Watering.

Set these Pots under a warm Wall, and draw a Mat over them at a Height above the Plants.

Keep them shaded till they have rooted well, and water them frequently.

Then set them in a warm and well sheltered Part of the Garden, among other Exoticks that bear Exposure.

Many of the Plants will thus flower the first

Year, and all of them the second.

They must be constantly watered while they stand exposed, and particularly when they are about to flower.

Toward the End of *September* the Buds will appear, and good Watering will bring them quickly forward.

At the Approach of Winter they must be removed into the Greenhouse; and they must not be shut up there too close.

In the succeeding Summer they are to be set out with the other Exoticks, and treated in all Respects like them.

By this Means we can assure the Gardener he will obtain this Plant in all its Elegance; and gain a Reputation above others, who follow less proper Directions.

Next to the Error of raising the Plant from bad Cuttings, the Soil that is commonly used for it prevents its Growth.

Mr. MILLER, the best Instructor the Gardeners have hitherto had, orders it to be planted in Pots filled with *light sandy Earth**: but Nature and Reason direct exactly the contrary; and Experience shews this is a Soil in which it cannot thrive.

Most of the other Kinds of Sage grow naturally in a dry and barren Soil, therefore they will thrive in it when planted; but 'tis otherwise with this.

It is a Native of the *Cape*, and there grows by the Sides of Brooks that dry up in the Summer†: in these Places it finds a rich and mellow Soil, and such we are to give it.

Of this *Commeline*, who writes its History, informs us, and other Writers confirm it; and upon such Knowledge alone can be founded its true Culture: but this needful Knowledge that Author could not attain, for *Commeline* wrote in *Latin*; and the Want of a liberal Education has shut from him the Stores of Knowledge.

Octob.

* Gardener's Dictionary, Article *Salvia*.

† *Juxta amniculus aestate siccus*, COMM. 1b. a. 183.

4. ÆTHIOPIAN SHRUB TANZY.

Pl. VI. We have endeavoured on many Occasions, and shall on many more, to introduce universally into the Gardens of the Curious, Plants whose Leaves have a peculiar Beauty, as well as those whose Grace is in their Flowers. This is an Instance.

Fig. 4.

There is a pleasing Brightness in the Flower, though it wants Dignity; but the Value of the Plant lies in the fine Wildness of Form, and in the easy Foldings and Divisions of the Leaves.

Authors have been divided what to call it. *Van Royen* rightly makes it a Species of *Tanacetum*. In *Commeline* it is also described as one of the same Genus, but others have named it an *Ageratum*.

This Confusion has been owing to the uncertain Characters by which those several Genera

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have been established; for they have been ill chosen. LINNÆUS has defined them better: none has described, so well as that Author, these Genera; indeed scarce any other has understood them.

He refers it to the Tanzy Kind, to which it evidently belongs, and calls it in his *Species Plantarum*; p. 884, *Tanacetum foliis pinnatifidis laciniis lanceolatis obtusiusculis integerrimis*: Pinnatifid-leav'd Tanzy, with lanceolated, obtuse, and undivided Segments.

This Author had called it, *Tanacetum foliis pinnatis*, in his *Hortus Cliffortiana*; but farther Observation shewed him that was less proper, the Leaves not being compleatly pinnated, though resembling that Character in their Division.

It is a robust and spreading Shrub; the Root is divided, brown, spreading, and full of Fibres.

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Octob. The Stem is woody, round, covered with a rough brown Bark, and full of Branches.

These expand every Way with a graceful Irregularity, unless unskilful Culture maims them: and they are round, weak, and green, while young.

At this Period they are also full of Leaves; but as they grow older they lose their Freshness, and the Leaves drop off.

Even this is an Article of Beauty in the Plant, when well kept; for these naked Branches serve as a Foil to the full-tufted Tops, and younger Shoots.

The Leaves are of a singular Form and Beauty: they are oblong and large, and are divided with great Regularity down to the middle Rib by numerous Incisions.

Their Colour is a fine bright green, and the Tops of the Shoots are whitish and downy.

This gives a very pleasing Variation at all Seasons; and when the Flowers burst forth they add to it greatly.

They decorate the Tops of the Branches in numerous spreading Tufts, and their Colour is a bright yellow.

The Seeds follow, but these rarely ripen in our Climate.

This is the general Form of the Plant, and the Disposition of its Flowers: to understand its Class and Place in the LINNÆAN System, these are to be examined with a great deal of Attention.

We have made our Student familiarly acquainted with the easier Distinctions of this Author's Method; and upon the Foundation of that Knowledge, we now shall venture to lead him into the Depths of the Science.

The Plants, whose Classes we have investigated hitherto, produce their Flowers whether singly, or in Clusters, yet in a regular Manner, one like another; or if unlike, (as where they are of distinct male and female Kinds) they are separated either by growing upon distinct Plants, though of the same Species; or upon so remote Parts of the same Plant, that they raise no Confusion from their Mixture. But we here enter on a different Assortment.

This Plant, and several others to be hereafter described, produce Flowers different in their internal Structure, but small and clustered together.

The whole spreading Tuft of Flowers, which terminates a Branch in this Plant, is formed of several distinct little Heads, and each of these of many Flowers.

These Heads are supported singly upon Divisions of the Stalk; and each Head contains these numerous Flowers in one common scaly Cup.

Of these, some contain both the male and female Organs of Generation; and others only the female.

These are not scattered at random, one among another; but Nature, wonderful in all her Works, has placed them regularly.

Octob. Those Flowers in each Head which contain both Filaments and Styles, that is, both male and female Parts, occupy the middle Part of the Tuft; and those which surround them, and form the outer Circle of the Head, contain only the female Parts or Styles; having no Threads or Antheræ.

This the Student will not find difficult to understand: and to render it more easy, it will be proper he lay before him a flowery Head of any Plant of this Kind, comparing what he sees with what he reads.

Having made himself acquainted with this, he understands the Term *Polygamia*; the Word LINNÆUS has invented to express this Mixture of hermaphrodite and female Flowers.

This Term is founded, like his other, in the *Greek*, and formed of two Words, expressing that the Impregnation of the Seeds is performed; or, as he phrases it, the Nuptials are celebrated different Ways; the Hermaphrodite Flowers in the Centre, producing Seeds ripened by the Dust from the Antheræ in the same Flowers; and the female Flowers in the Rim ripening Seed also, from the Impregnation of the Dust in the Antheræ of the central Flowers.

This, though so complicated and so essential an Article, is but the Distinction of an Order or Section; not of a Class.

We have named it here, that the Student may know in what Part to look for those Flowers; which being perfect afford the Marks of the classical Distribution.

Let him for this Purpose examine one of the small Flowers, separated not from the Edge, but from the Disk or Middle of a Head. In this he will find five very slender Filaments, with their Antheræ.

Let him not be hasty to refer the Plant therefore to the pentandrous, or fifth Class.

He will perceive on nearer Examination, that the Antheræ, or Buttons, do not tremble on their Filaments, as in most Flowers, detached and free; but that they unite together, and form a Cyndrick Body.

This is the Mark of the nineteenth LINNÆAN Class, called from this Union Syngenesia; Plants, whose male Parts perform their Office of Impregnation jointly or together.

This Union of the Antheræ, therefore, determines the Class of the Plant; and the Student is to remember, that wherever he sees them thus united, be their Number what it will, the Plant belongs to the Syngenesious Tribe.

Under this classical Distinction, the Plants which are very numerous are ranged in several Orders.

Of these the Polygamous Kind is one.

This we have thus far explained to the attentive Reader; and shall occasionally in the same Manner, enter into the Particulars relating to the others, when we treat of Syngenesious Plants belonging severally to those Sections.

Culture

Octob.

Culture of the ÆTHIOPIAN TANZY.

This, though a Native of a much warmer Climate, will bear the Summers expos'd in our Country, and only needs the Shelter of a Green-house in the Winter Months.

It rarely brings the Seeds to Perfection with us, and it is easily propagated by Slips, for which Reason we shall direct the Gardener to follow that Method. To this Purpose, let him, in the Beginning of *May*, dig up a Border in a shelter'd Place; where the Earth is rich and mellow.

Let this lie ten Days, to imbibe the Dews after its digging, and to settle; and then let him prepare it for the Reception of the Slips.

Let Lines be drawn length-wise and a-cross of this Bed, each Way at a Foot distance.

In the Centre of each of the Squares, let a Hole be open'd, and the Mould laid up at its Side.

This being prepar'd, let the Slips be taken off

from a flourishing Shrub, and planted with Care. Octob.

Let the Earth be drawn up about them, and let them have a gentle Watering: then cover them with a Mat, supported to a due Height not to crush them; and thus they are to be manag'd till they have shot good Roots.

It will then be proper to remove them into Pots, that they may have the Advantage of good Sun for the Remainder of the Summer, and Shelter in the Winter.

Let the Pots be large, and let them be fill'd with a Mixture of three Parts Garden-Mould, and one Part Sandy Earth, from under the Turf of a Pasture.

In this let them be planted with the same Care as in the first Bed; and in the same Manner water'd and shaded.

When they have well fix'd themselves in the new Earth, let them be set among the other Exotics during the rest of Summer; and when they are remov'd into the Green-house, let these go with them, sharing the same Care.

5. MARVEL OF PERU.

Pl. VI.
Fig. 5.

Nothing need be said in Praise of this Plant, which is already familiar in our Gardens, and deserves to be continued there: but we have some short Hints to lay before the practical Gardener with Respect to its Culture and Management, which encreasing its Beauty, will ensure it of keeping its Place.

Our Gardeners, beside its Name of *Marvel of Peru*, in some Places call it *Marvel of the World*.

The common Writers have called it, after CLUSIUS, *Admirabilis Peruviana*, and C. Baubine makes it a *Solanum*.

TOURNEFORT has distinguished it by the Name *Jalapa*; and VAN ROYEN by that of *Nyflage*.

LINNÆUS has but little alter'd the old Name of CLUSIUS, he calls it *Admirabilis*: and ranking all the Sorts of it which TOURNEFORT has erroneously nam'd, as Species; and MILLER has unluckily copy'd from him under the same Denomination, as Varieties, he adds no Distinction.

The Plant is a Yard high, and spreads irregularly into numerous Branches. The Root is long and thick, and has many Fibres; the Stalk is jointed, and the Leaves are placed in Pairs. They are oblong, broad, and not divided at the Edges. Their Colour is a deep fine green.

The Flowers are very numerous and full of Beauty. Some terminate the Stalks, and others rise from the Bosoms of the Leaves and Branches. They are broad, expanded, and of various Dyes, not only on different Plants, but often on the same.

The natural Colour is a tawny yellow; but from this they vary into the deepest purple, and the faintest Flesh-colour.

These are their easiest and most common Changes; but we also see them sometimes of a

pure snow-white, and sometimes variegated in a most elegant Manner with these several Colours, purple and white, purple, Flesh-colour and white, or all these Colours, and the original yellow. Hence the Varieties which mistaking Writers have call'd Species; and hence the Lustre and Beauty of the Plant.

There is, though these Writers do not know it, a certain Rule for determining what are Varieties and what distinct Species among Plants; this is by sowing the Seeds.

If the Seed of one will produce another Kind, that other is a Variety. If the Seed a Plant ripens will produce always its like, then it is a distinct Species.

By this Test all the Species, as they are call'd, of *Marvel of Peru*, have been found to be Varieties only; as have also the two common *Larkspurs*, which some have thought it Knowledge to pronounce distinct. LINNÆUS has been censur'd for asserting otherwise; and the Judgment of common Gardeners, has, by a Gardener, been call'd up against him.

LINNÆUS is not without his Errors; for no Man is or will be; but a Person of his Rank in the Science, ought to be very much above the Censure of these Persons, whose utmost Merit it will be to understand his Writings, when they shall be explained in their own Language.

The pointing out the Errors of this Author, may be useful to the World, because being his they will be dangerous; but this can only be done by those, who, like himself, have trod the mysterious Paths of learned Science: 'tis not in others to discover them.

We gave the Reader, in the last Instance, a Plant whose Class was not easy to be determined by those who are in their Studies; here we propose to

Octob. to him one in which it is conspicuous, and familiarly discovered.

Let him take off a Flower of *Marvel of Peru*, and he will find it elegantly form'd of a single Petal. Its Cup is small, and compos'd of five little Leaves. The Flower is tubular and slender at the Base, and spreads out into a broad folded Rim, where it is divided lightly into five blunt Segments. There is a *Nectarium*, but it is singularly plac'd below the Petal. In the Center rise five Filaments, each crown'd with its proper Anthera. These shew the Plant to be of the Fifth Class of LINNÆUS, the *Pentandria*: and the Style which rises single among them, shews also that it is one of the *Mono-gynia*.

Culture of the MARVEL OF PERU.

This beautiful Plant is a Native of the *East* and *West-Indies*; and, with us, being rais'd upon a Hot-Bed in Spring, in the Manner of the tender

annual Plants, it will, like them, bear the open Air of Summer, and flower very finely.

We shall not swell these Sheets, or trespass on the Reader's Patience, by repeating here at large the Culture of our tender annual Plants, which we have given at large in the preceding Numbers, and which every Gardener knows.

Instead of this dull Repetition, we shall remind the curious Raiser of this Plant of two Things; the first is, that the Soil be prepar'd for them, by mixing Cow-Dung and Coal-Ashes with the common Mould; the other, that they have every Day twice a little Water during the Time of their flowering.

These Cautions will make the Flowers much larger than in the common Way; and will keep up a Succession of them, till Frosts destroy the Buds: then the Stalk should be cut down, and the Root soon after taken up, and kept in Sand till Spring.

6. YELLOW PHLOMIS.

Pl. VI. **T**HIS, like the former, is a Plant so well
Fig. 6. establish'd already in our Gardens, that we need not write to recommend it. We shall direct our Labours therefore to the explaining the Structure of the Flower, and improving the present Method of Culture.

Its vulgar Name is the Sage Tree; and by some it is call'd Sage Mullen: the common Writers call it, in the same Manner, *Verbascum salviae foliis*. The Writers of more Accuracy, *Phlomis*. It is of a Class altogether different from *Verbascum*; and by this we see how idly they nam'd Plants, who had not regularly study'd Method.

LINNÆUS calls it *Phlomis foliis subrotundis tomentosis crenatis involucris lanceolatis*: *Phlomis*, with roundish, woolly, crenated Leaves, and pointed Involucra.

It is a Shrub of five Foot high: irregular in Growth; but distinguished by the peculiar whiteness of its Leaves; and by its great round Tufts of Flowers.

The Root is divided and spreading. The Stalks are numerous, woody, and brown. The Leaves toward the lower Part, are short, broad and roundish: those toward the Top are broad also, but somewhat oblong: they are irregularly wav'd and crenated lightly at the Edges; and they are white in Colour, and soft to the Touch.

The Flowers grow in an elegant Manner at the Tops of the Branches, in large round Tufts, and

they are of a fine gold yellow, and of the labiated Form.

The upper Lip is very large and arched, and the lower is small and divided into three Parts. When the Flowers are fallen, four naked Seeds appear in the Place of each.

To know the Class to which this Plant belongs, the Student must tear open a Flower; he will find in it four Filaments lodg'd under Covert of the upper Lip; and, of these, two are longer than the others: these are more efficacious in the Impregnation of the Seeds, and from them the Class is determined.

PHLOMIS is one of the *Didynamia*, that Term expressing those Plants which have two Filaments more efficacious than the rest.

The Plants of this Class are arranged by LINNÆUS under two Sections; and of these the one is compos'd of those which have the Seeds naked, and this is call'd *Gymnospermia*; the other of such as have them in a Capsule, and this is called *Angiospermia*. PHLOMIS is one of the *Gymnospermous*.

Its Culture is by Cuttings, and they should be planted in the Beginning of Summer. The next Spring they must be remov'd into their allotted Places; and their thriving will depend upon the Dryness of the Soil: one third Sand, and a little small Gravel, should be mix'd with Garden-Mould for this Purpose.

C H A P. II.

The Management of the Flower-Garden, for the Beginning of October.

THE Flower-Garden being the Seat of Amusement, and affording something to delight the Eye at all Seasons, the Gardener must

have two Points in View at this Time; the preparing the several Borders, for making their best Shew in the succeeding Months of Spring, and Sum-



1
*Globular-flowered
Gomphrena.*



2
*Oval-leaved
Rose Hibiscus.*



3
African Golden Sage.



4
Ethiopian Shrub Fanny.



5
Harpell of Peru.



6
Yellow Philomis.

Octob. Summer; and the keeping them clean and decent, where they have no actual Beauty.

The Leaves of many of those Plants which are to flower in Spring, will make a pleasing Appearance, and give Variety in Autumn: of this he is to make the most, by keeping them in good Order, and clearing the Ground between them.

Whatever dead Leaves there are among the others, should be taken off; and if any straggle or fall irregularly, such should also be retrench'd.

When these Shoots, from the several Roots, are thus in Order, let all Weeds be taken from between them; and let the Ground be rak'd smooth where it is good; and refresh'd with some rotten Dung and Pond-Mud, where it is poor and exhausted.

There are other Borders in which nothing appears above Ground: these are such as contain the Roots of those Flowers, which are to be the Glory of the succeeding Spring.

All that can be done with these, is to keep them clean; therefore let this be done in the most perfect Manner. Let there not be seen upon them the Shoot of the smallest Weed; and take Care to preserve that little Rounding we have ordered to be given them; that the Wet may not lodge in any particular Places to damage the Roots.

Though the Pride of Summer is over, and the Autumnal Flowers are beginning to decay, yet there are a few which will retain their Beauty, unless particularly severe Weather prevent it some Weeks longer.

Let the best possible Care be taken of these.

The *Starworts*, *Marvel of Peru*, and many of the other tender Annuals continue in flower.

To keep them in their Vigour, draw up the Earth about their Stems, pick off decay'd Leaves, water them daily; and stir the Earth at a Distance round their Roots.

This will keep them flowering stronger and longer than they would otherwise; and this will be farther promoted by cutting off the decay'd Flowers of such as ripen their Seed easily, if it be not wanted.

This Care being taken of the Borders, under these three Directions the Walks and Edgings come into Regard.

The Gravel must be, from Time to Time, clear'd of Weeds; and when there is Wet, well roll'd, this will give it great Firmness: a very considerable Advantage for Winter walking.

Where there is Box wanting in the Edgings, let it be now planted; and in this we shall direct the Gardener to be more critical than most usually are.

When any Part begins to decay, it very rarely recovers. The planting it a-fresh, takes very little Time or Trouble; and we therefore advise him, by all Means, to mend the least Fault as soon as it appears.

The first Frosts often do a great deal of Damage to the Carnation-Plants; and there is no Part of the Gardener's Business more irregularly executed than the Care of them. Some leave them expos'd, in which Case many are lost, and more are injur'd:

N^o 6.

others, in the Extreme of Care, keep them so close, that they destroy or weaken them. Octob.

We shall, on this Occasion, lay before the Public a Method of preserving them from Damage, communicated in a Letter from a worthy Correspondent, to whom we have been much indebted for his Communications to our Husbandry.

GENTLEMEN,

Mr. MILLER directs plunging the Pots, in which Carnations are planted, into a Bed of rotten Tan: but we have heard him for this many Times condemned. Indeed, the want of due Care has caus'd some Part of what has, in these Cases, been attributed to his Advice; but, upon the whole, Tan is not the proper Matter to be us'd on this Occasion, for two very substantial Reasons.

In the first Place we are to consider, that the Intent is to preserve the Plants from Frosts, which might penetrate the thin loose Substance of the Pots. This must be done by Means of something that will fall close to them: but Tan is loose in its Texture; and the Frost which is severe enough to get thro' the Pots, will not be kept off by that poor Defence.

In the second Place, few can judge when the Fermentation of Tan is absolutely over: for when it has no longer the Power to heat, so as to be sensible to the Hand, it will still retain the latent Principles of a new Fermentation, of a lighter Kind, which yet will be enough to force the Plants forward at a very improper Time. This was the Occasion of the Accident I last saw.

The Florist had plung'd his Pots in Tan which seem'd rotten enough, and which he thought had long lost all Power of heating; but the stirring and breaking it for the Reception of them, gave it so much of a new Fermentation, that the Plants shot unnaturally, and were destroy'd by the next Frost.

The other Practice most in Use, is to set the Pots up to the Rim in a Bed of common Mould. But as the Tan is subject to acquire a latent Heat; so the Dampness of common Mould gives the Frost too much Power; and where it is wetter than ordinary, will destroy the Plants it was intended to preserve.

The bad Accidents I have seen attend these different Methods, were the Cause of my trying myself, and recommending to my Friends a Practice of my own devising; the Success of which has now (for fourteen Years in my own, and near as long in several of my Friends Gardens) been so great, that I am glad of this Opportunity of recommending it to all who delight in this Sovereign of Flowers.

In the first Place, let the Plants, at the End of Summer, be put into somewhat larger Pots than those our Florists commonly use; because the greater Quantity of Earth will better defend the Roots.

T

If

Octob. If they be treated thus, it is best; if not, let them be taken as they come; and this Week let a Bed of a proper Size be made for them.

Mix together equal Parts of common Earth, from under the Turf of a Pasture, and of large ordinary Sand. Don't let the Earth be taken from the Borders of the Garden, for it will be best without Dung; add half the Quantity of one of the Ingredients of Coal-ashes, sifted. Stir all together, that it may be well mix'd, and have few Lumps.

With this make a Bed ten Inches deep, and of a Breadth to hold five or six Pots. The Length must be proportion'd to the Number of Pots to be preserved.

Let this Bed be three Inches within, and the rest above the Level of the Ground; and put the Pots into it up to the Rim, and as close as they can stand.

Then plant Hoops over it, and due Distance, for the Support of Mats that may cover it in extreme Weather; and having the Mats ready, leave all for the present to Nature.

When the Weather is bad, the Mats must be drawn over them, and they must be taken off when it is milder.

As this is the Result of my own Invention, and is approv'd by several Years Trial, I thought it might deserve a Place in your truly useful Book of Gardening.

I am, Gentlemen,

Your humble Servant,

C. HAWKINS.

Great Experience and Skill, may make the common Methods of preserving these valuable Plants, succeed; but this is equally certain of Success, and easy in the Management.

The Intent of this Work is, to enable the common Gardener to equal those who hold them highest in the Profession; and to inform the Gentleman, who amuses himself in his leisure Hours with the Delights of Culture, how he shall understand every Article of the Science, and be able to know whether his Servants manage their Business well.

S E C T. II.

The Business of the SEMINARY, for the Beginning of October.

THE Gardener will find a great deal to be done in this Part of his Ground the succeeding Week, and we are to advise him now to prepare for it. Many Things of different Kinds and Natures will probably be planted in the Middle of *October*, and the Ground is now to be got ready for them.

Here there comes in a Consideration of which the common Gardeners are not sufficiently aware. There will require a good fresh Ground for the free Rooting and successful Growth of these Trees; but the Advantage must be carry'd no farther: tho' it is necessary that it be good and fresh, it must not be enriched by Dung.

Tillage must, in this Case, as indeed it may on most Occasions, stand in the Place of Manure. Good Digging, and the throwing up the Soil to

some Depth, that it may have the Advantage of Sun and Air, are all that should be allow'd it.

The Trees planted out in this Ground now, are to be afterwards remov'd into other Places; and it is very essential to their thriving in their last Planting, that the Ground be better there than in the Places whence they were remov'd. This is a Reason why the Ground, prepar'd for receiving them in the Seminary, should never be rich: at the same Time, that, for their Growth, it is needful it should not be either absolutely barren or exhausted.

Upon this Principle will depend the Care and Management of the Ground in the Seminary, on this Occasion; and with the bringing such Part of it as is to be planted about this Time, into Order for it, will end the Business of the present Week.

S E C T I O N III.

P O M O N A, or the FRUIT-GARDEN.

C H A P I.

Fruits now in their Perfection.

THERE is one Nectarine proper to this Season, and it is not enough regarded: the being later than all the others, ought to give it a peculiar Value: this is the *VERMASH*. It is a very well-tasted Kind, of a middling Size, and always green in Colour.

There is not Sun enough at this Time to tinge the Skin of it; but, notwithstanding, it is sufficient to mellow the Juice, which is extremely well tasted.

Of the Peach Kind there are several yet in Perfection, and very fine.

1. The *POURPREE*, call'd, by our Gardeners, the *Late Purple*, is a very fine Peach. The Name denotes the Colour of the Surface, which is a deep purplish red almost all over: it has a Down upon the Surface, and when cut or bro-

ken the Flesh is yellow. When the Fruit is of a due Ripeness the Taste is very rich, and the Flesh parts freely from the Stone.

2. The old *Newington* Peach is now in its Perfection, and there are few superior to it. It is a large Peach, and is very round. The Colour is red toward the Sun, and pale, or whitish, on the opposite Side. When broke the Flesh is yellowish and very juicy; and it is red about the Stone.

3. Another Peach of this Season is the *Rombouillon*. It is a large and fine one; the Shape is longish, and it is furrow'd on the Side. It is covered with a light Down, and is red toward the Sun, and of a pale whitish Colour, with some Tinge of yellow toward the Wall.

Octob.

The Flesh is white, and full of a very rich Juice, but it is red in the Middle. This is one of the Peaches, the Pulp of which parts freely from the Stone.

A fourth Peach of this Season is the *Cambray*.

This is inferior to the three others, but is not without its Value. It is smaller than the last named, and of a longish Shape. Its Colour is a greenish white, and it is very little stained with red on the sunny Side. It is moderately juicy, and the Taste agreeable.

The small Medlar is now ripe; and it greatly exceeds the larger Kind. The Tree has no Thorns upon it, and the Fruit has a less Core.

This recommends it; but much more the Excellence of its Taste in the soft Pulp.

The Quince now ripens also; and there is one Kind very much superior to the rest. This is the *Portugal*.

It is of the Shape of the Buree Pear, and about its Size; and one Thing which ought to recommend the Tree is, that it is a good Bearer.

Of the Pear Kind there are, 1. The long stalk'd *Rose Pear*.

This is very little inferiour to the other *Rose Pear*, described in a preceding Chapter. It is a middling Pear, and has a very long and slender Stalk.

It is of a dark brown toward the Sun, and yellow on the other Side, when ripe. There is a Firmness in the Flesh of this Pear, which to some is very agreeable.

The Wasps are fond of it, as are also many of the Birds; 'tis therefore difficult to preserve it; but there is one Advantage, which is, that it will ripen with lying; so that it may be gathered a few Days before the Time when it is

to be used, and it will thus be obtained entire.

Octob.

2. The *Salveati* is a second Pear of this Season. It is one of the round Kinds, and is of a moderate Size: and it is red toward the Sun, and elsewhere, when ripe, yellow.

The Flesh is tender, and the Taste extremely sweet. This is another of the Kinds of which Birds and Insects are fond; and it must be therefore gathered two or three Days before it is ripe, for it will not eat the worse.

3. The *Deans Pear*, called also the *Doyenne*, ripens now, and is an exceeding fine Kind.

This is of a middling Size, somewhat longish, and of a white Colour. The Flesh is tender, and full of a rich and pleasant Juice.

With respect of Apples, there are now in good Season the *White Calville*, a very good Kind, and the *Golden Rennet*, and *Golden Pip-pin*, too well known to need Description.

The present Year does not favour Grapes; but it is a Season when some good Kinds naturally are in their Perfection.

1. The *Flesh Grape*. This has its Name from the Colour of the Berries, which is exactly what we call *Flesh Colour*. It is a Kind that ripens in such Years as do not succeed for others.

The Berries are of a longish Shape, they stand close in the Bunch, and they are full of a very sweet Juice. The Bunches are small, but they make a good Figure, because the Berries ripen together.

2. The *San Moireau*. The Berries of this Kind hang thin and straggling in the Bunches, and have a very long Stalk. They are oblong and very large. Their Colour is brown, and the Fruit eats fleshy, with a very pleasant Juice.

C H A P. II.

The Care and Management of Fruit-Trees.

THIS Week is a very proper Time for the pruning and managing of Gooseberry and Currant Trees; and they are to be strengthened at the Time of pruning, by breaking and enriching the Earth about them.

The best Method is to cut them pretty close, and then leave their Branches to display themselves according to Nature; and when this is done, a sprinkling of old Dung should be scattered over the Ground in which they stand, and dug in.

The common Method of managing these Shrubs is extremely bad. Mr. MILLER, who has been hitherto supposed a Writer incapable of Mistakes, directs the Branches of these Bushes to be tied up with Withs, and Coleworts and Cabbages to be planted between them. This is not less contrary to Reason, than it is contradicted by the present better Practice. This tying up of the Branches, leaves the Earth about their Stems too much exposed to Frosts; and the Plantation of these large and drawing Plants exhausts the Nourishment from the Ground.

The Contrivance of Nature in spreading the Branches of these Bushes near the Ground, is

for the Defence of their Roots, the Ground being kept soft and mellow under their Shelter; which his Method of tying up prevents.

With Respect to the other, it is a Chance whether the Cabbage and Colewort Plants stand the Winter; and if they do, their best Produce is by no Means worth the starving of the Shrubs.

For this Reason, as Kitchen Ground is seldom scarce, and the Produce of the Currant and Gooseberry Bushes, when in its Perfection, a very useful and valuable Article; they are by no Means to be injured for the Sake of what is so much inferior to them: and they will, by the Method we have proposed for the autumnal Management of the Shrubs, rival many Fruits of better Name.

The same Kind of Management is to be continued to the Raspberry Ground.

First let the Gardener go through the Plantation with a sharp Knife and a steady Hand, and boldly cut away the old useless Wood.

When this is done, let him go over the Ground he has trampled with a small strong
Hoe

Octob. Hoe, breaking the Surface all about the Plants. This will destroy the Weeds, and prepare the Earth about them to receive the full Benefit of the Air and Dews.

Octob. Lastly, let him dig the Ground between the Rows; and by this Means he will cut off the Ends of the Roots, and prepare a fresh broken Soil for the new Fibres which will shoot from them.



S E C T I O N V.

C H L O R I S, or the K I T C H E N - G A R D E N.

C H A P. I.

Products of the Kitchen-Garden now in Perfection.

TH E principal Produce the Kitchen Ground now affords, beside Cabbages, Carrots, and the rest of that common Tribe, are Artichokes, which are valuable, because of the Season; and some Cauliflowers, ripened at this advanced Time, by the Management we directed of breaking in the Middle Leaves.

Beet Root is never in better Season; and for those who are fond of Salsafie, this is a good Time for it.

There will be also some good Lettuces, and from the Mushroom Beds a vast Produce, if they have been made and preserv'd according to our Rules.



C H A P. II.

The Care and Culture of the Ground.

TH E early *Battersea* Cabbage, the Plants of which should now be well advanced in Growth, will be fit to be planted out at proper Distances, where they are to stand for cabbaging. This is supposed to be one of the most trivial Operations in Gardening, yet not one in fifty does it well.

The Loss of these Plants in the Frosts is a common Complaint; and it is the Occasion of a great Disappointment, not only to private Families, but to those who raise them for Sale.

Many Contrivances are directed for securing them against this Danger; but this should be considered in the last planting them out, for there is no Preservation so great.

The Frost affects the Surface of the Earth first, and that Part which is at the least Depth, most.

The Ground cracks by its Influence, and the Roots of the Plants are left bare and destroyed. To prevent this in the Plantation of Cabbages, let a good Hole be opened with a Spade for each. Let the Root be let in somewhat deeper than would be needful on any other Occasion; and when the Earth has been well fixed about it, let some of it be drawn up in a Kind of Hill round the Stalk of each Plant.

The Trouble of this is little, and the Advantage is very great: few of the Plants thus managed are lost in the worst Winters.

We have directed the covering the Mushroom Beds with Thatch; let them be now examined to see whether it holds good, or is in any Part defective; for if the Wet gets in, there will be presently an End of the Produce.

Asparagus at *Christmas* is reckoned a great Delicacy; but it is very much inferior to that which comes at a more natural Season. However, for those who chuse to supply their Tables at that Time, this is the Period of preparing for it.

Hot Beds must be made for it this Week,

and we shall in the next inform the Gardener what is to be done with them.

The Beds of Mint and Baum, and the like Plants, must now be enriched and encouraged for making a good Appearance in Spring. The first Care is to cut down the dead Stalks, and lay the Ground even. Then it is to be sprinkled over with a little Dung from the old Cucumber Beds. This comes in an easy Way, and is fitter for the Purpose than any other. It should be scattered over the whole Surface with a regular Hand. Here let it lie till there have been some gentle Showers to wash it into the Ground; and after this the Earth about the Roots should have a careful digging. This answers every Purpose of Improvement, and the succeeding Spring will not fail to shew the Advantage.

The Winds of this Month are more destructive than is commonly thought. They nip some of the Plants, and they rock and sway others, so that they are loosened of their Hold, and there is an Opening given to the Frost. Let the Damage be guarded against in some Places, by sticking up dry Furze Bushes; and in others, by Reed Fences well secured by strong Posts; and where the Plants are seen to be thus rocked and sway'd, let the Gardener go round them with his Hoe, and having broke the Surface, let him earth them up as directed for the Cabbage Plants.

Young Mint will be required late in Winter, and the Preparation for it must be made now. It is to be planted on a hot Bed; but not forced too much, or burnt. The Heat of the Bed must be moderate, and it must be covered deep with a good Mould.

Hot Beds managed in this Manner will produce a Succession of young Mint, till the Spring brings in the Shoots of that, for which we have directed the Gardener so well to provide in the open Ground.

E D E N:

A

COMPLEAT BODY of GARDENING.

N U M B E R VII.

For the Middle of OCTOBER.

S E C T I O N I.

F L O R A, or the P L E A S U R E - G A R D E N.

C H A P I.

Flowers and Curious Plants now in their Perfection.

I. ÆTHIOPIAN MARYGOLD.

Octob.
Pl. VII.
Fig. 1.

THIS is an elegant and singular, perennial Plant. It claims a Place in the Collections of the Curious, for the Beauty of its Flowers, and more for the Duration of that Beauty: for with the Culture we shall recommend it will continue in Bloom all the Year; and the Variety of its Flowers in Colour under their several States and Appearances, and according to their different Situations on the Plant, adds greatly to its Value.

Upon the whole, it is one of those Plants which every Garden should have, and every Writer on Gardening should recommend; for it has every Advantage: Profusion of Flowers, lasting Beauty, and an easy Culture. But we are fallen into a Way of being content with a few common Things; and none advises us to add to them.

BOERHAAVE, who raised this in the *Leyden* Garden, called it *African Caltha*. COMMELINE, from some faint external Resemblance with the Daisy Kind, has named it the cut-leaved *Bellis*: but it is properly a Marygold; and its distinct Name *Calendula foliis lanceolatis sinuato dentatis* Numb. VII.

caule nudo: naked stalked Calendula, with Spear-pointed and deep cut Leaves.

The Root is brown and fibrous; it spreads under the Surface, and lasts many Years.

The Leaves rise from this in regular thick Tufts; and have themselves a great deal of Beauty: they are four Inches long, and moderately broad, smallest at the Base, larger to the End, deeply sinuated, and sharp-pointed as a Spear. They are of a fleshy Substance, and of a fine green Colour.

Among these rise the Stalks: they are numerous, upright, naked, and of a bright pale green. Each sustains a single Flower; and as the Plant is usually decorated with ten or a dozen of them at once of various Heights and Degrees of Maturity, the Sight is wonderfully pretty. One Flower stands on the Summit of each Stalk, and it is very large and beautiful.

It consists of a central Disk, and radiated Edge; and in each Part there is great Elegance and Variety.

The Rays, or long Petals of the Edge are Snow white within, and of a bloody purple on the

Octob.

the Outside; so that the front View of a Flower affords in them one Colour; the Back another: and the Buds shewing only the Out-sides of these Petals, are of a deep Violet purple.

In the same Manner the Disk, which is composed of numerous separate little Flowers, is of a Violet Purple before they open, and of a most elegant Straw Colour when they expand.

The Seeds are flat and membranaceous.

The Student in the LINNÆAN System will be startled on looking into this Flower; and scarce know what to think of a Plant, in which its Centre, instead of Filaments and a Style, offers to his Eye separate and perfect Flowers, ranged in an even Cluster.

This is one of the Plants the common Authors have called Corymbiferous; and many Flowers, tho' overlooked by the Incurious, are of this singular Structure.

It is one of the *Syngenesia Polygamia* of LINNÆUS; Plants whose Antheræ unite, and whose Fructification is performed in various Manners.

We have led the Student toward an Understanding of this abstruse Class, by the Account given in our last Number of the *Æthiopian Tanzy*; and having there so far cleared the Way, we may here, without Difficulty, lead him to the compleat Understanding of the Class.

We there shewed him Clusters of small Flowers united into little Heads, and standing in them naked: We here present to his Eye Clusters of little Flowers disposed in the same Manner together, but surrounded by radiated Petals.

The Head of the Tanzy formed what is called a naked, and this a radiated, discoide Flower.

This shews him that he is to consider these gaudy Petals as no more than an extraneous Ornament; and that the little Floscules making up the Disk, are the proper and distinct Flowers of the Plant; containing the Parts of Fructification, and singular in nothing but that they are thus collected into a Head, and edged with Petals.

Thus far understanding the Nature of the Flower, let him examine its external Structure first, and then the internal Parts of each Floscule.

The whole Flower, for so the Disk and the radiated Parts are called together, is placed in a large Cup divided deeply into sixteen or eighteen long and narrow Segments: the Number not constant or certain. These are pointed at the Ends, and equal in Bigness.

This Cup is formed for the Reception both of the Flowers of the Disk, and the Substance on which they grow: and though in this Plant, and all others of its Kind, it be composed but of a single Series of Segments, in others of the syngenesious Tribe it consists of more, and they are disposed in various Manners. Within this Cup stand the Petals disposed as Rays, and these surround the Disk, which is the Cluster of the proper and distinct Flowers.

These let the Student observe with an attentive Eye. He will perceive, as he inspects

the whole Disk, that they are of two Kinds; a great Number of short ones standing together in the central Part, and a Circle of longer surrounding them at the Rim, just within the Petals.

It will be natural at first Sight to imagine these only differ from the others in being more mature, but it is otherwise.

Having thus viewed them together, let him examine them separately, and he will then perceive they differ essentially.

Let him take carefully one Flower from the Rim, and another from the Centre; and open them tenderly, not to disturb their internal Parts. He will find in the Flower taken from the Centre five Threads or Filaments, and the Rudiment of the Fruit with its Style, which is very slender: but in that he took from the Edge, he will see only the Rudiment of the Fruit with its Style, there being there no Filaments.

For this Reason the Flower from the central Part is the proper one for examining in order to know the Class; and in this he will find the Antheræ on the five Filaments united into a Cylinder: this shews it to be of the syngenesious Class; and the various Flowers in the same Head shew it also of the polygamous Kind, or those whose Fructification is performed different Ways.

This Preparation of Nature is in some *superfluous*; the central Flowers, as well as those in the Edge, perfecting their Seeds: in others it is *necessary*, as in this Plant; the central Flowers which contain both male and female Parts, from some Defect in the female Organs, not well ripening their Seeds; whereas those in the Edge, which have only female Parts, being impregnated by the Antheræ of the central Flowers, ripen them perfectly.

This is the Origin of a third Distinction in LINNÆUS, for he calls those *superflua*, where the Flowers in the Centre ripen their Seeds as well as those in the Rim; and he uses the Term *necessaria*, where they do not.

This Plant therefore is one of the *Syngenesia polygamia necessaria* of LINNÆUS.

The Student now understands the Terms; and he has mastered the most difficult Point in the LINNÆAN System.

Culture of the ÆTHIOPIAN MARYGOLD.

This Plant is to be raised originally from Seeds, and afterwards to be increased by parting the Roots.

The *Dutch* get their Seeds from the *Cape of Good Hope*; and by that Means raise the Flower in great Perfection: but they will ripen here, and the Plants may very well be produced from them.

The Method is this. Sow them upon a hot Bed in Spring, with those of the *Marvel of Peru*: treat the Plants in the same Manner; and when those are planted out, let these be also set in Pots.

Thus far the common Practice of our Gardeners would manage them rightly; but here must come

Octob. come in some particular Care, otherwise, though they will live, they will not have their natural Beauty.

Let a Mixture be made of equal Parts, Pond Mud, coarse Sand, and the Earth from under a Wood Pile; with this fill three or four Pots, and let them be large ones. In the Centre of each Pot, at the Time of planting out the common Annuals, place one of these. Settle the Earth well to the Root, water it, shade it, and when it has got Strength from the setting, place it in the free Air, among the Greenhouse Plants.

Toward *October* let it be removed into the Stove, and there preserved the Winter. Octob.

There usually break out some very fine Flowers upon it the first Year; but this is a small Consideration. In the *May* following Buds will appear in great Numbers, and it must then be watered frequently. This will set it in for good flowering.

As the Flowers fade let their Stalks be cut off; and it will thus be loaded with a fresh Succession, almost without Stop or End.

2. BLUE UMBELLATED CRINUM.

Pl. VII. This is a Plant of very noble Aspect, and of Fig. 2. consummate Beauty. The Number and Disposition of the Flowers, for they form a vast and regular Head, is a great Recommendation to its Culture, as well as their Form and Colour singly.

The first Writers who described the Plant called it a Hyacinth; but this was an irregular Manner of Expression; for the least Attention would shew it does not belong to that Kind.

VAN ROYEN calls it a Polyanthus; and LINNÆUS, in his earlier Works, has expressed it by the same Name; but in his later and more correct Treatises, he makes it a Species of Crinum.

Its proper Name is, *Crinum foliis sublanceolatis planis, Corollis obtusis*: Obtuse flowered Crinum, with plain and sublanceolated Leaves.

The Root is large, irregular, tuberous, and roundish; its Colour yellow, and its Substance juicy. From its Top run several thick white Fibres, which at their Ends part into many smaller, and lose themselves among the Mould.

The Leaves are numerous, and not without their Beauty; they rise in a round Tuft, and they are long, narrow, thick, juicy, and of a very bright and lively green.

In the Centre of these rises a single Stalk: this is round, thick, upright, hollow, naked, and two Foot high.

The Flowers grow in a great rounded Head or Cluster, at the Top of the Stalk, and they are extremely elegant.

Their Colour is a fine lively blue, and the Filaments within them are long and white, and crowned with Buttons of a gold yellow.

The Flowers have their separate slender Footstalks, which all rise together from one Point at the Head of the main Stalk: and they are there surrounded by a kind of foliaceous Case, serving in the Place of a Cup. This is form'd of two oblong Leaves, and they turn back after the Time of flowering.

Each Flower is form'd of a single Petal, tubular at the Base, and divided deeply into six oblong obtuse Segments. In the Centre rise six Filaments. These are equal in Length and Disposition: they therefore mark the Class of the Plant,

declaring it to be one of the *Hexandria*, the Sixth of LINNÆUS.

In the Centre is seen a single Style, rising from the Rudiment of the Fruit; and this shews it to be one of the *Monogynia*: it is therefore of the sixth Class and first Section.

The Seed-vessel is of an oblong Figure, and contains numerous large Seeds in three separate Cells.

It is a Native of *Africa*, and there rises wild in Places where the Soil is little better than a naked Sand.

'Tis an Observation that the Flowers there are always most numerous and best colour'd when the Plant grows within the Influence of Salt-Water. This, and the natural Soil and Place, declare its proper Culture.

Culture of the blue umbellated CRINUM.

The Method to obtain the Flowers of this Plant in their full Perfection, is to nurse it with due Heat and Moisture in a proper Soil.

In *February* throw into a Heap one Barrow-full of light Mould, from under the Turf of a hilly Pasture, and the same Quantity of coarse Sand: mix these well together, and sprinkle on them two Ounces of Kitchen-Salt. Let this Heap lie, and turn it two or three Times before the Season of using it: this must be the Beginning of *June*.

Prepare two or three moderate Pots. First lay in the Pieces of Tile, that the Hole may not be choak'd up: then put in about one half the Pot-full of Earth.

On this, place carefully one of the Roots obtain'd from *Africa*, or an Off-set from some other Garden; pour in more of the Soil to it; settle the Whole carefully, and well about it, and let it be covered half an Inch deep.

Give it a very gentle Watering, and set it in a warm shelter'd Place; but in the open Air. Here give it now and then a gentle Watering, and let it continue till the Beginning of Autumn. Then remove the Pots into a Place where the Sun has full Power, and continue watering them frequently and moderately.

The Danger of Decay will be now over, and they

Octob. the Outside; so that the front View of a Flower affords in them one Colour; the Back another: and the Buds shewing only the Out-sides of these Petals, are of a deep Violet purple.

In the same Manner the Disk, which is composed of numerous separate little Flowers, is of a Violet Purple before they open, and of a most elegant Straw Colour when they expand.

The Seeds are flat and membranaceous.

The Student in the LINNÆAN System will be startled on looking into this Flower; and scarce know what to think of a Plant, in which its Centre, instead of Filaments and a Style, offers to his Eye separate and perfect Flowers, ranged in an even Cluster.

This is one of the Plants the common Authors have called Corymbiferous; and many Flowers, tho' overlooked by the Incurious, are of this singular Structure.

It is one of the *Syngenesia Polygamia* of LINNÆUS; Plants whose Antheræ unite, and whose Fructification is performed in various Manners.

We have led the Student toward an Understanding of this abstruse Class, by the Account given in our last Number of the *Æthiopian Tanzy*; and having there so far cleared the Way, we may here, without Difficulty, lead him to the compleat Understanding of the Class.

We there shewed him Clusters of small Flowers united into little Heads, and standing in them naked: We here present to his Eye Clusters of little Flowers disposed in the same Manner together, but surrounded by radiated Petals.

The Head of the Tanzy formed what is called a naked, and this a radiated, discoide Flower.

This shews him that he is to consider these gaudy Petals as no more than an extraneous Ornament; and that the little Floscules making up the Disk, are the proper and distinct Flowers of the Plant; containing the Parts of Fructification, and singular in nothing but that they are thus collected into a Head, and edged with Petals.

Thus far understanding the Nature of the Flower, let him examine its external Structure first, and then the internal Parts of each Floscule.

The whole Flower, for so the Disk and the radiated Parts are called together, is placed in a large Cup divided deeply into sixteen or eighteen long and narrow Segments: the Number not constant or certain. These are pointed at the Ends, and equal in Bigness.

This Cup is formed for the Reception both of the Flowers of the Disk, and the Substance on which they grow: and though in this Plant, and all others of its Kind, it be composed but of a single Series of Segments, in others of the syngenesious Tribe it consists of more, and they are disposed in various Manners. Within this Cup stand the Petals disposed as Rays, and these surround the Disk, which is the Cluster of the proper and distinct Flowers.

These let the Student observe with an attentive Eye. He will perceive, as he inspects

the whole Disk, that they are of two Kinds; a great Number of short ones standing together in the central Part, and a Circle of longer surrounding them at the Rim, just within the Petals.

It will be natural at first Sight to imagine these only differ from the others in being more mature, but it is otherwise.

Having thus viewed them together, let him examine them separately, and he will then perceive they differ essentially.

Let him take carefully one Flower from the Rim, and another from the Centre; and open them tenderly, not to disturb their internal Parts. He will find in the Flower taken from the Centre five Threads or Filaments, and the Rudiment of the Fruit with its Style, which is very slender: but in that he took from the Edge, he will see only the Rudiment of the Fruit with its Style; there being there no Filaments.

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The Student now understands the Terms; and he has mastered the most difficult Point in the LINNÆAN System.

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Thus far the common Practice of our Gardeners would manage them rightly; but here must come

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The Root is large, irregular, tuberous, and roundish; its Colour yellow, and its Substance juicy. From its Top run several thick white Fibres, which at their Ends part into many smaller, and lose themselves among the Mould.

The Leaves are numerous, and not without their Beauty; they rise in a round Tuft, and they are long, narrow, thick, juicy, and of a very bright and lively green.

In the Centre of these rises a single Stalk: this is round, thick, upright, hollow, naked, and two Foot high.

The Flowers grow in a great rounded Head or Cluster, at the Top of the Stalk, and they are extremely elegant.

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The Flowers have their separate slender Footstalks, which all rise together from one Point at the Head of the main Stalk: and they are there surrounded by a kind of foliaceous Case, serving in the Place of a Cup. This is form'd of two oblong Leaves, and they turn back after the Time of flowering.

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The Method to obtain the Flowers of this Plant in their full Perfection, is to nurse it with due Heat and Moisture in a proper Soil.

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On this, place carefully one of the Roots obtain'd from *Africa*, or an Off-set from some other Garden; pour in more of the Soil to it; settle the Whole carefully, and well about it, and let it be covered half an Inch deep.

Give it a very gentle Watering, and set it in a warm shelter'd Place; but in the open Air. Here give it now and then a gentle Watering, and let it continue till the Beginning of Autumn. Then remove the Pots into a Place where the Sun has full Power, and continue watering them frequently and moderately.

The Danger of Decay will be now over, and they

Octob. they will shoot out their Leaves. This is all that must be expected from them the first Season; but the next they will flower.

When the cold Weather comes on, they must

be taken into the Stove; and after that, nothing more will be requir'd but clearing the Earth from the Top of the Pot to the Root once in a Year, and putting in fresh of the same Composition. Octob.

3. EVERGREEN PURSLAIN.

Pl. VII. Every thing in this Plant conspires to recommend it to those who delight in Exotic Beauties of the Vegetable Kind: the Form, Regularity, and Disposition of the Leaves; the wild spreading of the Stalks, and the simple Elegance of the Flower. We know what the *Roman* meant by that Phrase which none could ever translate, *Simplex munditiis*; and we read it in this plain but pleasing Flower. Fig. 3.

Authors have not well known what to make of a Plant which with all the Characters of Purslain had so conspicuous a Flower. VAN ROYEN, and, in some of his Works, LINNÆUS has call'd it an *Anacampteros*.

DILLENIUS hath distinguish'd it by the Name of *Telephiastrum folio globoso*.

COMMELINE calls it *Portulaca Africana semper-virens flore rubicundo*; and LINNÆUS, in his later Writings, *Portulaca foliis ovatis gibbis pedunculo multifloro caule fruticoso*: Shrubby-stalk'd Purslain, with swelling oval Leaves, and several Flowers upon the Stalk.

The Root is white and thick, and has many spreading Fibres. The Stalks are numerous, slender, of a woody Hardness, but not erect and bushy: the Weight of the Leaves is more than they have Strength to support, and they spread themselves upon the Ground, or hang from the Sides of the Pot, in a very pleasing Irregularity.

The Leaves stand thick upon them, and they are fleshy, swell'd, pointed, and of a very fine and lively green.

The Flowers grow at the Tops and Extremities of the Stalks and Branches, and they are large and of a fine bluish Colour.

Chance of Culture sometimes makes them deeper, and sometimes paler than this exact Tinge; but it is their natural Hue, and they never are so beautiful.

The Seed-vessel follows, and it is large, and full of small pale brown Seeds.

The Cup, in which the Flower is plac'd, is divided into two Parts, and is small.

The Body of the Flower is compos'd of five broad, short, and pointed Petals: and in its Cen-

ter stand numerous Filaments: these are to be examined, to know the Place which the Plant demands in the LINNÆAN System.

We have before acquainted the careful Reader, that when there are in a Flower more than twelve Stamina, its Class is to be determined by the Place of their Origination. If they arise from the Inside of the Cup, it is of the *icosandrous* Class; but if from the Receptacle, then the Plant belongs to the *polyandrous* Kind.

On tracing the Filaments, in this Case, to their Base, they will be found adhering to the Receptacle, not to the Cup; therefore this is one of the *Polyandria*, the thirteenth Class in the LINNÆAN System. In the Center rises a single short Style, and this ranks it among the *Monogynia* of the first Section.

Culture of the EVERGREEN PURSLAIN.

This elegant Plant is to be rais'd from Seeds, or propagated by Cuttings; for it succeeds equally well either Way.

The Seeds ripen in *England*, and it will grow from them; or it may be rais'd from such as are brought from the *Cape of Good Hope*, its natural Place of Growth: and these, if brought into *Europe* tolerably fresh, never fail to raise the finest Plants.

They are to be sown in a Hot-Bed; and rais'd in the Manner of annual Plants: and, when well grown, they are to be planted into Pots, in which they will sometimes flower the first Year, and never fail the second.

The Cuttings succeed very well in the common Management of those of tender Exotics which we have deliver'd already; and the second Year they will make good Plants.

In whatever Way it is rais'd, it must be defended from the Severity of our Winter, and it very well makes amends for the Trouble; for it is green and beautiful all the Year, and flowers the greatest Part of the Summer.

4. SWEET CALLA.

Pl. VII. The Figure of this Plant will put the Reader in Mind of a very frequent one under our Hedges, to which it has a general Resemblance: this is the common ARUM. But it is not for that the less worthy a Place in the most curious Collection. Fig. 4.

Notwithstanding the Likeness it bears to that Plant in the external Form, it is extremely different in the particular Parts, and even in the Generical Characters; and it has Beauty, Singularity, and Fragrance, to recommend it to the Attention of those

Octob. those who delight in these Curiosities of Nature.

The external Resemblance it bears to our *Arum*, has led most Authors to call it by that Name; but we shall shew, in the Examination of the Flower, with how sufficient Reason those of later Time, and more correct Enquiry, have separated it from that Genus, and join'd it with some others under a distinct Denomination.

COMMELINE, following the Aspect of the Plant, has call'd it *Arum Æthiopicum, flore albo odorato*.

LINNÆUS makes it a Species of *CALLA*, and distinguishes it by the Title of *Calla foliis sagittato-cordatis spathe cucullata, spadice superne masculo*: *CALLA*, with Arrow-headed and Heart-like Leaves, with a hooded Spathe, and with the Spadix containing male Parts on its upper End.

This Name of LINNÆUS is conceiv'd in Terms which will seem strange to the Student's Ear; but that is owing to the singular Structure of the Plant, and they will become easy with the Assistance of our Figure and the Description.

The Root is tuberous and large, brown on the Outside, white within, and of a tender Substance. From this run several thick white Fibres.

The Leaves rise many together, and they have great Beauty: they are plac'd on long thick Footstalks; and they are very large, and of a fine glossy green.

They are long, and moderately broad, deeply indented in a Heart-like Manner at the Base, wav'd at the Edges, and terminated by an extremely small Point, which is sometimes single, sometimes split, and always turns in the Manner of a Tendril.

The Stalk rises in the midst of these, and it is robust, upright, thick, two Foot high, and of a glossy green.

On the Summit of this Stalk grows a single Flower, unlike every Thing, except the *Arum* Kind, in general; and in the most essential Particulars different from that. Its general Form is this.

There grows from the Head of the Stalk a broad hollow leafy Sheath or Case; open, and whitewithin; and in the Centre of this stands up an oblong Club, resembling that of *Arum*, and in Colour yellow. Upon this are plac'd the Flowers, which are minute and whitish; and, when they are fallen, there come Berries, which, when ripe, are red.

The whole Flower, when it is in Perfection, has at Evening a very sweet Smell, perfectly perfum'd, and somewhat resembling Musk.

Its Taste is acrid, and there is one extremely singular Circumstance attending it: this is, the Way in which it visibly discharges abundant Water. If too much be given it at a Time, the twining Extremities of the Leaves grow damp, and afterwards throw out the wet in Drops: it comes from them clear, but it tastes strongly of the Plant. This is a Singularity first observ'd by COMMELINE, and it may be of great Use in explaining Vegetation.

The young Student will be at a Loss where to

N^o 7.

look for the Characters of this Plant, or what to determine concerning it: but when we have led him thro' this Difficulty, he will have very nearly master'd all the LINNÆAN System.

The great hollow Sheath or Case, he is only to consider as the Cup of the Flowers; and the Club itself as destin'd for the Reception of the Organs of Impregnation. The Flowers are very minute, they have no Petals: and they must be carefully taken off, and examined separately. They will be found of two Kinds, some consisting of Filaments, and their Buttons or Antheræ, others only of a Rudiment of the Fruit with its Style.

They stand somewhat confusedly on the Club; but, in general, the male Flowers, that is, those consisting of Filaments, are plac'd on the upper, and the female on the lower Part.

Such is the Structure of this singular Fructification, in which, as there are neither a particular Cup nor Petal to each Flower, it is not easy to say how many of the Filaments constitute one; but the best Observation, and the Analogy of Nature, usually observ'd in these Things, seems to fix it at six.

The young Botanist is not, for this Reason, rashly to refer the Plant to the *hexandrous* or sixth Class; for when there is any thing so extremely remarkable in their Disposition, as in this Instance, that becomes the Character of a distinct Genus.

He finds them here plac'd upon the Club which LINNÆUS considers as the general female Part of the Fructification, it being destin'd for the Support of the Berries.

This makes a peculiar Mark, and arranges the Plant under a distinct Class. It is his Twentieth: the Title *Gynandria*, a Term form'd, as the others, of two *Greek* Words, and expressing Plants in which the Filaments or male Parts, grow upon the female, or when they are plac'd in an irregular Manner together.

The essential Distinction between the *Calla* and *Arum* is, that in the *Arum* the Body of the Club is naked, and the male and female Parts are arrang'd at its Base; but in the *Calla* they cover the Whole.

Culture of the CALLA.

This Plant is worth any Care, not only for its Singularity and Fragrance, but for the Article of its dropping Water. We have seen it fail; and shall therefore be the more particular in delivering its true Culture.

It is a Native of the *Cape of Good Hope*, and 'tis best to get the Roots thence.

The Leaves and Stalk decay as soon as the Berries have ripen'd, and the Roots should then be taken out of the Ground. Being carefully ty'd up in Bags, they will keep many Months out of the Earth without Damage; and as soon as receiv'd, they must be planted in the following Manner:

Mix together one Bushel of old and well-wrought Garden-Mould, two Bushels of Earth from under a Wood-Pile, and half a Bushel of Sand, work these well together, and they will

X

make

Octob. make a Compost very like the Earth in which the Plant naturally grows.

Fill as many Pots with this as there are good Roots, and carefully lay one Root in each, covering it two Inches deep. Give the Pots a very gentle Watering, and set them in some Place where there is Shade and Shelter. They must be now and then refresh'd with a little Water, and left to Nature for shooting.

After some Time the first Shoots of the Leaves will appear, and this must be watch'd; for it is the Signal for removing them into a more expos'd Place.

Let them in this Condition be set among the

Greenhouse Plants, where they are plac'd out for the Octob. Summer, and every Evening gently water'd. The Leaves will thus soon expand themselves.

Thus they are to stand till the Time of taking in the Greenhouse Plants, and they are then to be remov'd with them, and manag'd in all Respects as the rest. After this they will flower every Year, and their Evening Sweetness is very agreeable.

When they are thus establish'd, their Roots will produce Off-sets, from which the Plants may be increas'd; but those which are obtain'd this Way, never equal in any Respect such as are rais'd from good Roots brought from *Africa*.

5. SILVERY PROTEA.

Pl. VII. The young Botanist is here to be made acquainted with a Shrub, whose Leaves alone have a Right to claim for it a Place in the best Collection; had it no Fruit or Flower.

They have not only Beauty, but Variety; for scarce two Shrubs of it are in this Respect alike.

It is a Native of *Africa*, and there the Whiteness and the Lustre of its innumerable Leaves, make all other Trees poor in the Comparison: it represents a Shrub of wrought Silver.

With us it loses much of this Lustre, but it retains Beauty enough to recommend it to the best Notice, and varies in Colour every where.

No Shrub has been more esteem'd, nor has any been distinguished by so many, or so pompous Names.

PLUKENET has call'd it *Leucadendros*, The White Tree. RAY, *Argyrodendros*, The Silver Tree: and BOERHAAVE, *Conocarpodendron*. TOURNEFORT has rank'd it as a Species of *Globularia*. And each of these, besides the different Generical Names, has divided it under that variety of Appearances we have nam'd, into a Number of distinct Species.

The Tree is one and the same in all those Forms, and LINNÆUS has justly establish'd, and well express'd this, by calling it PROTEA, The Changing Tree.

There is a distinct Kind with brown and oval Leaves, from which he has separated this more usual and beautiful Species, under the Name of *Protea foliis lanceolatis obliquis acutis sparsis floralibus verticillatis*: PROTEA, with oblique, acute, spear-pointed, scattered Leaves, and with the floral ones plac'd verticillately.

It rises with us to a handsome Shrub, and spreads out variously in Branches. The Root is brown and spreading: the Trunk is dusky, and the Branches are paler.

At the Tops they usually retain the natural silvery whiteness of the Tree, as do the young Leaves; and whatever be the general Change in this Plant, yet these Parts view'd in a full Sun, shining on them, have a Lustre vastly superior to any other Vegetable, and worthy of the Character

those give it who have admir'd it in its native Soil.

The Leaves are oblong, narrow, sharp-pointed, and variously plac'd, obliquely and otherwise, so that they shew themselves always in many Forms. They are serrated elegantly at the Edges, and they are of a firm Substance. Their Colour, naturally, is a perfect white, and their Aspect between Silk and Silver. They are covered with a fine light Down, and glitter in the Light.

The Flowers are singly inconsiderable, but the Fruit is as elegant as the Leaves. It resembles the Cone of our Firs or Pines, in Structure, but it appears form'd of Silver.

The Flowers are dispos'd in the small Head, which afterwards ripens into this silvery Fruit. Each is form'd of a single Petal, which is tubular, and divided into four Segments at the Rim; and within it stand four Filaments with their Buttons, and a single Style. These fall; and then the Fruit enlarges without altering its Figure.

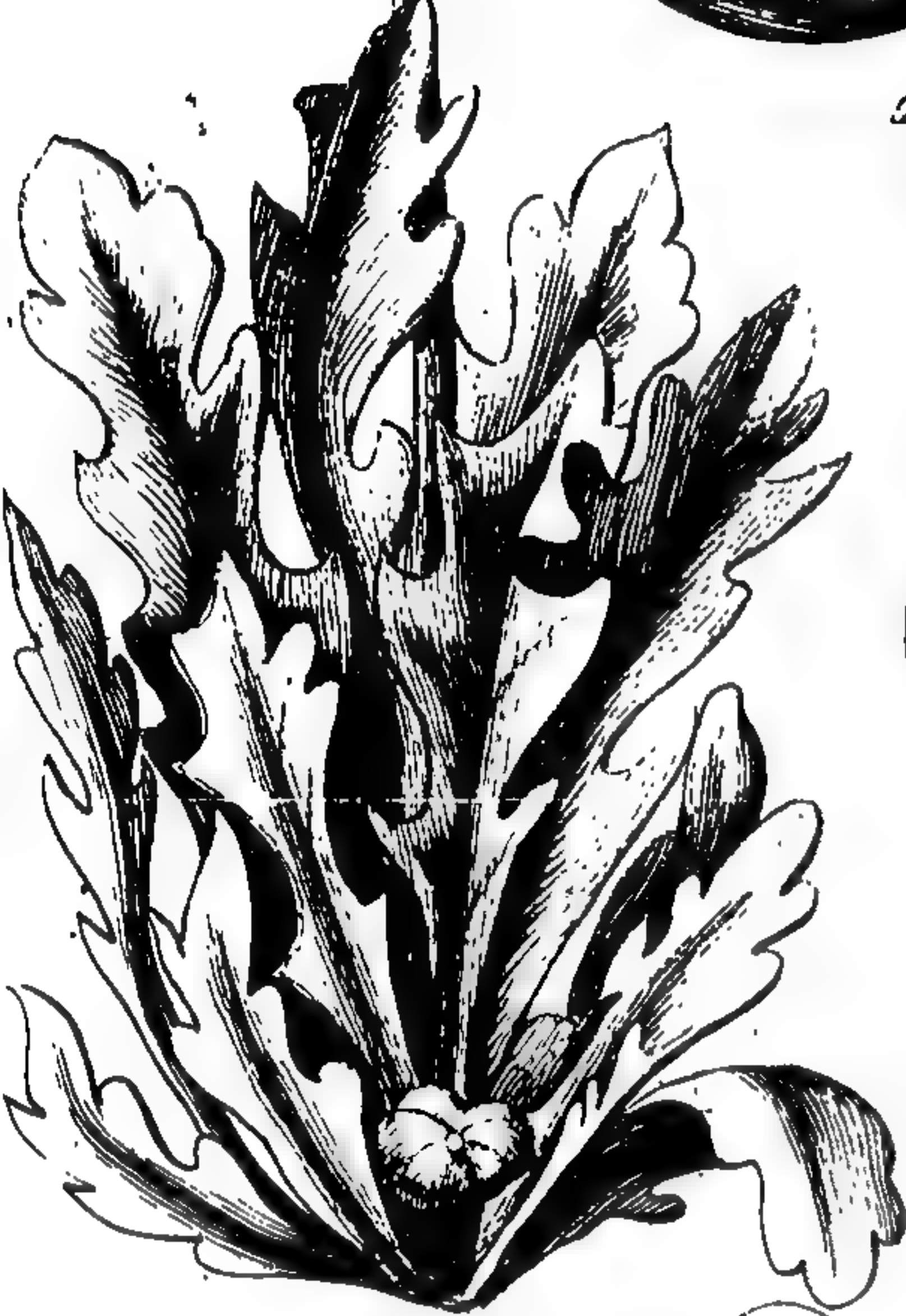
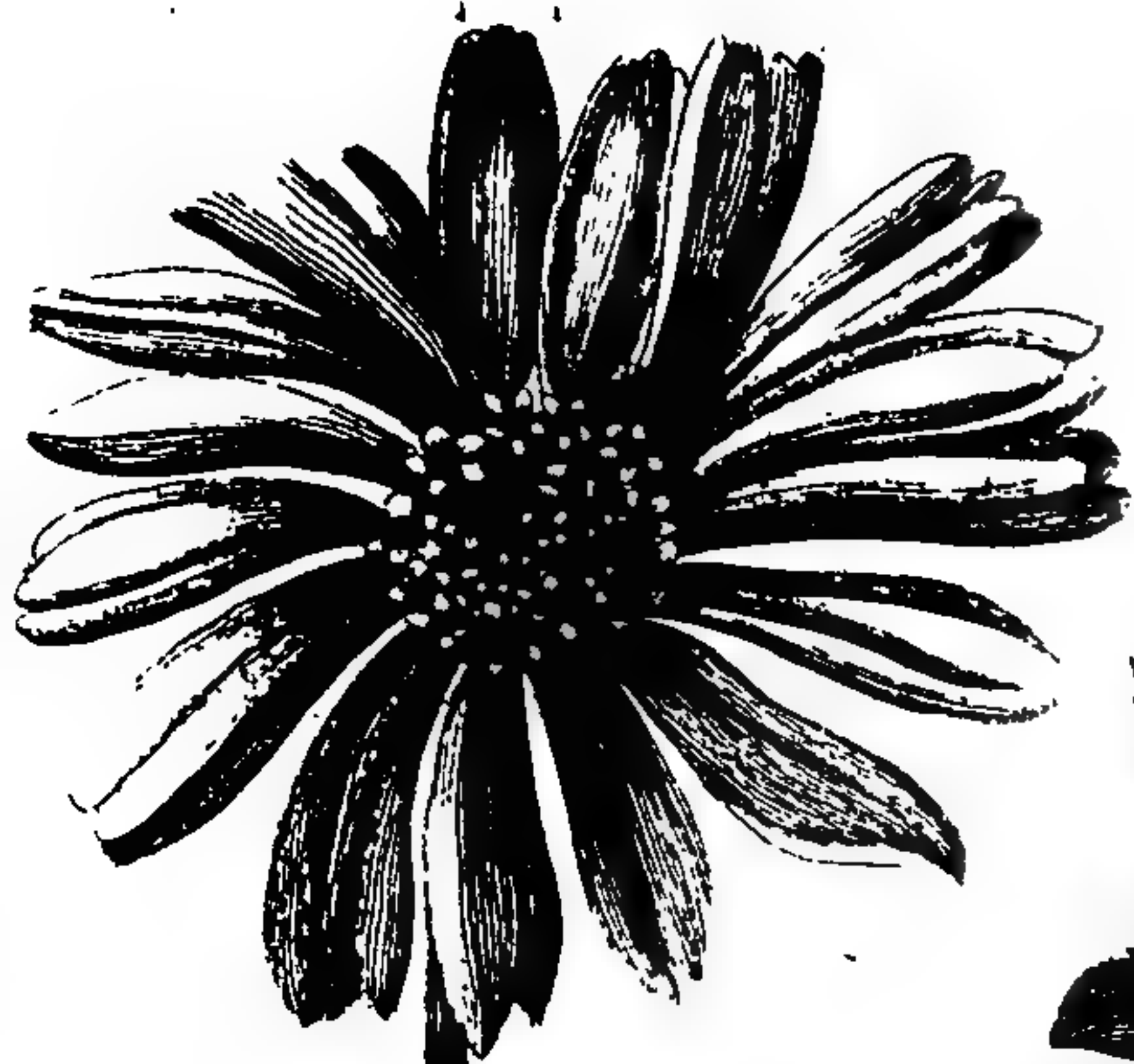
These Flowers, where there is an Opportunity of seeing them, shew the Tree to be of the fourth Class of LINNÆUS, the *Tetrandria*; Plants in whose Flower the male Parts are four: and the single Style declares it also to be one of those which form the first Section of that Class, the *Monogynia*: those with a single female Part.

Culture of the SILVERY PROTEA.

It is a Native of *Africa*, where it grows to the Stature of a moderate Tree. It thrives best in a dry but not too poor Soil; and its Fruits ripen in such Abundance there, that 'tis easy to obtain them. From these the Seed is easily pick'd out, and it will freely grow.

This therefore is the best Way of raising the Shrub.

Early in Spring mix up the following Compost: Put together one Barrow of Earth, from under the Turf in a rich hilly Pasture, a Barrow and half of Earth from under a Wood-Pile, and half a Barrow of Sand; break over this two moderate Pieces



Athiopian Marygold



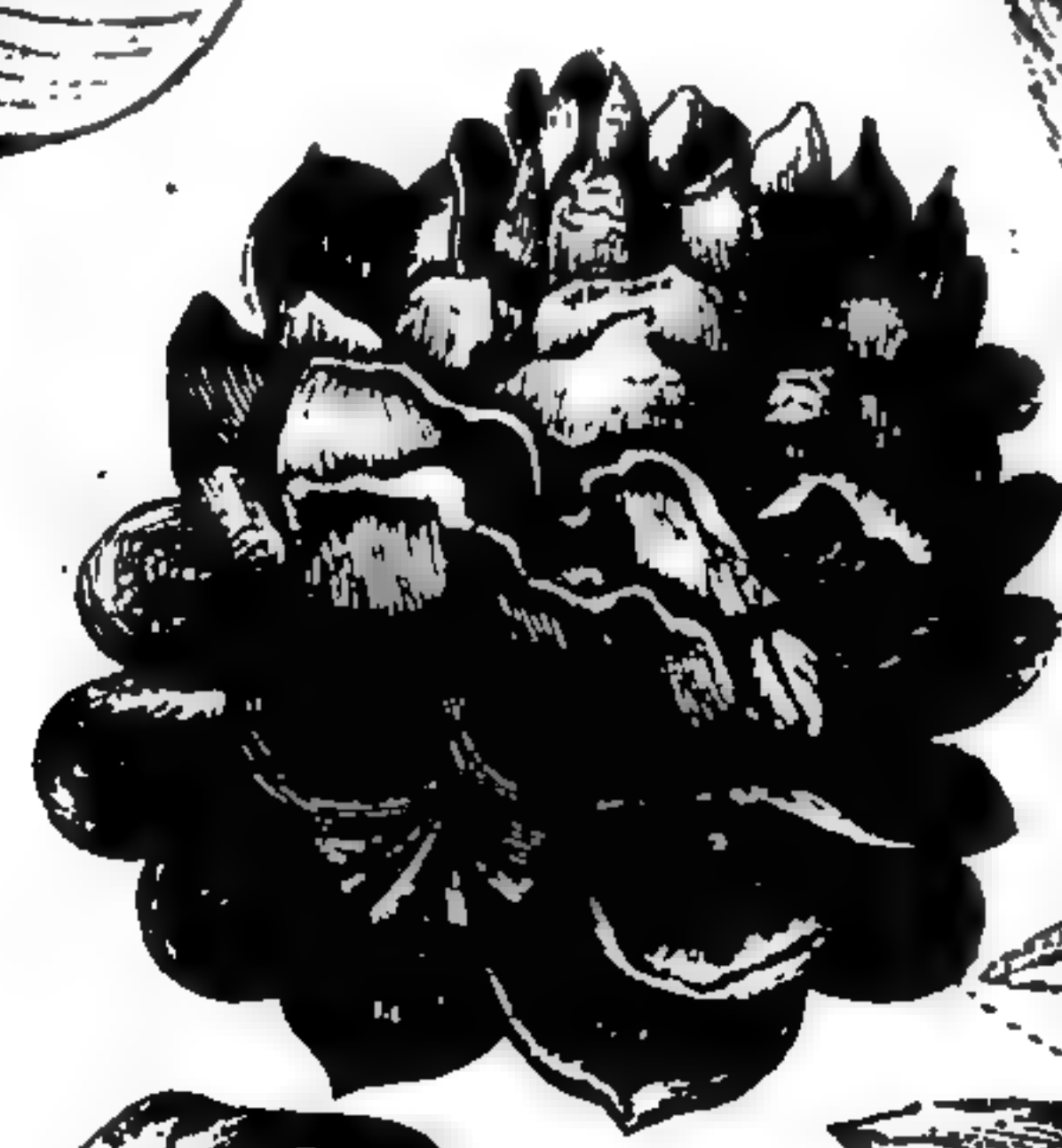
Blue umbellated Crinum



Ever Green Purslain?



Sweet Calla



Silvery Protea



Purple Geranium with auriculated Leaves

Octob. Pieces of Stone Lime, and leave the Heap to the Weather.

When it has lain ten Days, breaking and stirring it every Day, and gently watering it every third Day, it will be fit to use.

Pick out the Seeds carefully from one of the Cones that has been gathered ripe and kept sound; one Seed will be found under every Scale.

Fill a Couple of Pots with the Compost, and sprinkle over the Surface of each a dozen of the Seeds. Cover them half an Inch with the same Earth, and put the Pot into a Bed of Tanner's Bark.

Every Evening let these Pots have a gentle Watering; and in about a Month the Seeds will shoot. It will be longer if the Seed were old; and sometimes I have seen it earlier by five or six Days.

When the Plants appear, let them be once a Day gently watered, and take Care not to hurt their tender Shoot, which must be the Stem or Trunk of the succeeding Shrub.

Few Gardeners consider the Importance of the Seed Shoot; and this is the Reason we see so few well-shaped Shrubs in *English* Gardens.

In these Pots let the young Plants stand till they are three Inches high: then let there be as many small Pots prepared for them, as there are Plants.

Put into each some of the Compost, and in each plant one of them; taking them carefully up from the first Pots. Put more of the Compost round them, and see they be set upright and firm; then give them all a very careful and very gentle Watering.

Octob. Repeat this afterwards once a Day in the same sparing Manner.

As soon as the Plants are in the Pots, let them be put into a Bark Hot-Bed.

Let this Bed be of a moderate Heat; shade it with Mats, and thus let them remain till the next Evening. They will then begin to recover the Removal.

The Bed is to be shaded at Noon every Day for ten Days or more; and after that, as the great Article of rooting will be over, they must be watered at Times, and have Air by raising the Glasses.

The clumsy Practice of our Gardeners is to do this by a Brickbat, and so their Instructors direct them: forming their Rules by what they do, not what they should do, and conveying little Knowledge but what they have before.

I have been used to prop the Glasses of my Bark Beds by a notched Stick, with Quarter Inch Divisions; and by this Means can give my Plants any Degree of Air that is necessary.

When they are thus by Degrees hardened, let them in the Middle of Summer, be set out in the open Air, in a warm and well sheltered Place, and watered at Times.

After this they require nothing but the common Care of tender Plants. They must be removed into larger Pots when they have more Bigness; and in Autumn they must be taken into the Green-house among others which require that Protection.

The great Care must be to let them have as much free Air as they can bear; for on this depends the silvery Colour of the Leaves.

6. PURPLE GERANIUM, with AURICULATED LEAVES.

Pl. VII. The Geraniums which we obtain from the warmer Quarters of the Globe, are well known, as Plants of great Beauty.

This is one which adds Singularity in the Manner of its Growth, to the common Character of Elegance in the Flower; and therefore merits, on more Accounts than one, a Place among the Exoticks we raise in our Gardens.

The Characters of this Genus of Plants are so strongly impressed on the beaked Form of the Seeds, that all Authors have referred them to the same Place.

LINNÆUS distinguishes this by the Name of *Geranium calycibus monophyllis, foliis oblongis integris tripartisque, pedunculis radicalibus*: a name containing the essential Parts of a Description: Geranium, with Flower Cups formed each of a single Leaf, and with the Leaves of an oblong Form, some undivided, some broken into three Parts, and with the Stalks of the Flowers rising immediately from the Root.

The Root is white and fibrous. The Leaves rise from it in Clusters, and spread themselves with a pleasing Irregularity upon the Ground.

Each has its separate long Foot-stalk, which

is naturally of a whitish green, but often reddish.

The Leaves vary among themselves; some are simple, and others formed as it were of three Parts.

The simple Leaves are oblong, broad, obtuse, and irregularly dented at the Edges: the others are of the same Form, but they have beside a Couple of small Leaves at their Base.

All are of a beautiful green, and make a handsome Appearance.

The Stalks rise in the Tuft, and they are low and naked. About ten Inches is their usual Height; and at the Top there burst from a divided general Cup many slender separate Pedicles, each sustaining a single Flower.

The whole Cluster forms a Kind of round Umbel, and is very regular and handsome.

Each Flower is large, and of a shining purple, with a Tinge of scarlet.

We want Words in the *English* Language to express the Diversity of Colours; but this is as near a Resemblance as can be given of the singular mixed and beautiful Tinct of this Plant's Flower.

The

Octob. The Seeds are gathered into a Crane-like Head, as in the other Geraniums; and these are considerably large in Proportion to the Plant.

Culture of this GERANIUM.

This is a Species which must be raised from Seeds; and the Choice lies between those ripen'd on Plants at Home, and such as may be imported from *Africa*.

There need be little said of the Preference that is to be given to the *African* Seeds, when they can be had fresh; but those the Plant ripens itself here, will produce it, and it may be propagated also by parting the Root.

The Seeds, whether obtained from Abroad, or ripened here, must be sown in *February*, in

Pots of a Compost made with equal Parts of Octob. Garden Mould and Wood Pile Earth.

These must be set in a Bark Bed; and when the Plants have a little Height, they must be transplanted into separate Pots, in which they are to remain some Time in another hot Bed.

After this they must, by Degrees, be hardened; and then set out among the Exoticks, which bear the free Air of our Summers.

They will usually, with good Management, flower the first Year, and they scarce ever miss the second.

They are to be preserved in Winter in the Greenhouse, and require no other Care than what is bestowed upon all other Plants placed in those Buildings.

C H A P. II.

The Management of the Flower-Garden.

WE suppose the Borders of the Flower-Garden, according to the Directions before given, to be now perfectly clean, and in handsome Order.

Let the Gardener walk his Rounds with some small Sticks in his Hand, and observe if there be in any Part a Vacancy among the Perennials planted for the succeeding Summer's flowering; and if there be, let him place one of the Sticks as a Mark.

The good Condition of the Borders will make him able now to see it clearly.

Let him at the same Time observe, whether the Distances at which his Roots of this Kind are planted, will admit any Thing between them; and let him judge of this with Moderation.

We will not suppose him to have performed his Work so ill, that there is proper Room every where between Plant and Plant for another; but if they stand so, that an Addition can be made once in three or four, or if it be six Plants, by placing in a Root, forwarder or backwarder on the Border, without disturbing the rest, let him in each such Place put down a Stick; and then consider what is in the Ground already; and by what Additions he may best give Variety, as well as Fullness.

He has a great Choice of Things before him, and may mix Colours, as well as Forms, very agreeably.

Where the Places are marked backward in the Borders, he may bring in from the Seminary *French* Honey-suckles, Foxgloves, Columbines, Golden Rods, and the Perennial Asters: and where they are marked in front, and Plants of less Height will be better, he may vary the Scene, and fill the Border with Sweet Williams, Cyanus, and the Double Violet.

All these succeed perfectly well when planted

at this Season. A good Hole should be opened for them, and the Ground well broke, and they should be brought in immediately as they are taken up, with a good deal of their own Earth about them.

They must be trimmed at the Ends of their small Fibres, placed upright in the Ground, and have the Earth drawn regularly to them.

After this a gentle Watering settles the new Mould to them, and they will strike good Root before the Frosts attack them.

Let the Florist now look to his Pots of Auriculas; if there be any dead Leaves let him pick them carefully off. Let him see no little Weeds or Moss rise in the Pot; and when all is thus cleared, let them be removed into a Place of Shelter.

The principal Danger to the Auriculas in Winter rises from Wet freezing in the Ground. They will bear Cold very well while the Earth is in a good Temper about them; but when they are exposed to Rains, and sharp Frosts follow, most of them are lost or spoiled: therefore the Gardener will understand, that to keep them dry is more essential to their Preservation, than to keep them warm.

When he has gone round his Flower Borders in this careful Manner, and has left all clean and carefully planted, let him take the same Course with his Plantations of flowering Shrubs, and with those which are dispersed in the Borders.

In larger Gardens these Plantations are usually kept separate; but in smaller the Shrubs stand in the Borders in the Way of perennial Flowers. In each Case let him go the Round, beginning at one Spot, and returning at last to it.

Let him examine the whole with a curious Eye, for this is the Time to amend Defects; and they are so easily mended, and so conspi-

Octob. cuous when let alone, that no Cafe can be too much upon this Head.

Let him in the same Manner note the Places where new ones may be planted, and also mark any that are decayed or decaying. Where they are easily had, as in the Neighbourhood of Nursery-Men, or where there is a Seminary tolerably kept up for the Supply of the Garden, they come so cheap, that it is never worth while to wait for the Recovery of one that is decaying. At this Season when any such are discovered, tear them up at once, and place new ones in their Stead.

When these bad Shrubs are removed, and the Places marked where others are to come, let there be opened in each Spot a good Hole for the Reception of the new one; and let them be brought fresh in, with as much of their Earth about them as conveniently can be; and planted with Care, keeping them upright, and fixing the Earth well about them.

The Variety of Shrubs which offer for this Purpose is very great, and most of them are extremely beautiful: but as we have found from Experience, that some of them succeed better at one Time of planting, and some at another. We shall here add a List of such as always thrive upon being transplanted at this Season.

These are the Double Bramble and Double Cherry, both very beautiful when in Bloom; the first frequently stained with red, and the other

Snow white. The Bladder and Scorpion Sena, the Lilac and Syringa, the Spiræa, the Bird's Cherry, and the Arbutus; and to these we shall add two others, though of very different Kinds, yet of great Beauty: these are the Coccoygria and the Spotted Cistus.

The Gardeners take their Choice of planting these several Kinds in Autumn or in Spring; but the autumnal Season is vastly preferable. This we advance upon Experience against the Cavils of the best of them; and it is of particular Service in the present Cafe.

Upon any Occasion it is preferable, because the Shrubs strike some Root before Winter; and as they require little Supply in that Season, those they now send out serve for the Purpose; and they are ready to push with Vigour, when the Warmth and Moisture of the Spring swells and invigorates them: but in the particular Cafe we here mention there is a very great Advantage.

If the Shrub be planted to supply a Deficiency in Spring, it does not look like the rest during that Season, but is a continual Blemish; whereas those which we order to be planted in this Part of *October*, will stand the Winter in sufficient Health, and when the Spring comes will shoot out their Leaves uniformly with the rest, and flower at the Season that Year; in all Things agreeing with the others, and appearing a regular Part of the Plantation.

Octob.



S E C T. II.

The Business of the SEMINARY, for the Middle of October.

IT is not only in the Garden this Work of Plantation is to go on at the present Period: a great deal is to be done of the same Kind in the Seminary.

Last Week we directed the Ground to be prepared for it; and now we come to the Business of the Plantation.

The Preparation to be made in the Nursery is of two Kinds; Part is directed to the Service of the Fruit-Garden and Orchard, Part to the Wilderness, and other Plantations of that Kind, in which Beauty is consulted more than Use.

For the Fruit-Garden and Orchard Stocks must be now planted, for grafting and budding.

It is a common Custom, for the Sake of saving a little Trouble, to buy the Trees of Nursery-Men; but we advise such as are curious in their Fruit, to take Care they deal only with those of Reputation, and always to enquire upon what Stocks they have been propagated.

It is a yet better Method to raise the Stocks for this Use; for then there can be no Mistake: and of this the Gardener may be assured, that the Taste and Flavour of the Fruit will always be influenced by the Stock.

N^o 7.

The most plain Instance of this, is in the raising of the Nonpareil by grafting. If two Nonpareil Shoots be grafted at the same Time, the one upon a Paradise Stock, and the other upon a Crab, and both planted, purposely for the Trial, upon the same Ground, and with all the same Advantages, the Difference in the Fruit will be so great, that, unless from the Shape and Colour, none would believe them to be the same.

The Crab Stock will give a sour harsh Taste to the Apple beyond Thought.

This is a Subject we shall treat more at large hereafter; but thus much is needful to remind the Gardener, with respect to what Stocks he now plants out in his Seminary.

There are various Stocks of the Apple Kind proper for Apples; and as the Choice is in many Respects equal, it should be directed by the intended Form and Use of the Tree: and the Gardener should know which Stock will suit best for each Form of Growth.

The three principal Stocks we shall recommend for this Purpose, are the Codling, Paradise, and Creeper Apple.

When the Trees are intended for Espaliers or Dwarfs, the best Stock is the Paradise or Codling,

Y

Octob. ling, according to the Nature of the Fruit.

The sweet mealy Apples should be grafted upon the Codling Stock ; and the more rough and austere upon the Paradise.

This is the practical Method to improve the Fruit from the Nature of the Stock ; and let the Gardener, foreseeing this, introduce this Week Stocks of each Kind into his Seminary, to be in Readiness.

Beside these, he is to consider also that there will be some Apple-Trees required for the Orchard ; and these it will be best to propagate on Crab Stocks, that Kind always making the best Standards.

He will see by this we are not for banishing either Kind ; but only for reducing each to its proper Use.

Let him, now he sees the Reason of it, be careful to bring into the Seminary, or to remove into Quarters from the Seed-Beds, Stocks of these three Kinds for his Apples. They may be raised either from Kernels of the several Kinds, or Layers ; but we altogether prefer the former Method.

The sweet and mealy Apples are the best for grafting on the Crab ; and there is in every Respect an Advantage in this Method : for the Crab Stock not only raises the best Standard Tree, but it gives a Sharpness to the Apple, which fits it for the Service of the Kitchen ; that being the principal Use of Standard or Orchard Trees.

The best Stock for Apricots is the common red Plum, known among Gardeners by the Name of the Wheat Plum. 'Tis the Fault of the Apricot when full ripe to be mealy, and without Flavour ; its Flesh being of a middle Nature, between melting and breaking, and therefore having the Advantage of neither.

We have shewn how the Taste and Substance of Fruits may be altered by the Stock on which they are grafted ; and thus there is a Way of remedying this Imperfection of the Apricot.

Our Gardeners are not so careful as they ought to be of the Kind of Plum on which they graft

this Tree.

If it be on a mealy, insipid, or sweet Plum, the Taste of the Apricot is rendered so much worse than natural : and on the other hand, if this Stock be chosen which I have directed, the Sharpness of its Taste gives a Spirit to the Apricot, and its Fruit is never so mealy or insipid ; indeed I never tasted a common Apricot fine when ripe, unless grafted on this Plum.

There is also a great Advantage attending this Kind of Stock ; which is, that it is not too apt to throw out Suckers, as most other Kinds ; and it is also very free from Gum.

For the Peach and Nectarine, the best of all Stocks, and indeed the only one that is proper, is the Green Gage Plum raised from the Stone.

All Gardeners know the Disadvantages to which these tender Trees are liable, when raised here ; but of all the Accidents that attend them, I have found the worst to arise from the Nature of the Stock ; our People raising them upon the Musclem and Wheat Plum ; and in my own Experience I have found, that when raised upon the Green Gage Stock, both Peach and Nectarine, even the best Kinds of them, thrive well.

They are not so subject to Blights, and they produce healthy and flourishing Trees.

For Plums of all Kinds there is no Stock equal to the right Green Gage. Some raise the several Kinds from their own Roots at once ; but the Fruit is not so fine.

Let the Gardener raise some Stocks from Kernels, as we shall direct in its proper Place ; and if he have none in the Seminary at present, let him bring in some from an honest Nursery-Man, to plant with the rest at this Season.

These are the Kinds to be planted in their separate Quarters in the Seminary this Week. Let them be set with Regularity, and allowed a good Distance.

In the same Manner let there be a Plantation made of the several other Trees, from which they may be next removed into the Places where they are to remain in the Wilderness, or in the proper Quarters of the Garden.

S E C T I O N III.

P O M O N A, or the F R U I T - G A R D E N.

C H A P I.

Fruits now in their Perfection.

THERE is one Cherry of this Season, the Morella, it is commonly used for Tarts, or in Brandy ; but when it has hung thus long upon the Tree, and is well mellowed, it is in the Opinion of those, who are best Judges of Fruit, superior to most other Kinds.

There is also a Merit in the Lateness of the

Season, for Fruit at any Time is acceptable, when the other Kinds are not to be had.

Mulberries continue very good if they be carefully picked ; but in this there is more Nicety to be observed than in gathering almost any other Fruit.

There is but one Period at which the Mulberry

Octob. berry is fine: this is just as it grows ripe. Before this it is sour, and afterwards the Mellowness takes off the Flavour.

A skilful Gardener will find it difficult to pick off a Dish for a Desert, from several Branches of a Tree: but it is a Thing he should leave to no other Person.

We are to use every Art now to make up the Desert, and to take in every Article: The Nut Kind continue good.

The red and white Filbert should be sent up, carefully pick'd from worm-eaten or decay'd ones: they differ in nothing but the Colour of the thin Skin, which surrounds the Fruit, as the red and white Bean.

There are also at this Time three Kinds of Hazel-Nut, that will make a pretty Variety in the Desert.

The *Spanish* and the *Lombard* Nut have Shells as thin as the Filbert, and they bear well in our Gardens.

The Cob-Nut deserves also a Place for the Bigness; but the Shell is thick and hard to break.

The short blue Fig is now very good. It is a middle-siz'd one, of roundish Shape; the Skin is thin and blue, and the Flesh red and rich. One Advantage of this Kind is, that the Seeds are very small.

The *Genoa* is another Fig very good at this Season. It is of a longish Shape, and of a dark purple Colour, and is one of the largest Figs we have. The Pulp is Blood-red, and very rich, but the Seeds are numerous and large.

The Green Fig is the opposite of the *Genoa*: it is round like a Button, small, and always green

on the Outside; but the Flesh is of a fine red, and it is very well tasted, though not so rich as the preceding.

The Currant Grape now makes a fine Shew upon the Bunch. The Cluster is small, and the Berries are longish. They stand close press'd together, and they are black, but covered with a fine blue Powder, better and more delicate than that of the finest Plum. The Berries of this ripen so regularly, that the Bunch may usually be sent entire to Table.

The *Alicant*, which some call the *Spanish Grape*, is the contrary of this. The Bunches are very large, and the Berries also are large, but they hang stragling.

They must also appear more loose hung than they naturally are by that Time they get to the Table; for many of the Berries are quite green usually, when others are ripe: these must be pick'd off before the Bunch is sent up; but the Goodness of the Grape makes amends for the Look.

Of the Peaches there is one now in its Perfection, and it is a very good one for a late Kind; this is the *Persique*, call'd by our Gardeners, The *Late Admirable*.

It is a very large Kind, of a round Shape, and terminated by a little Point. Its natural Colour is a pale green, but it gets a good deal of red on the sunny Side when the Season is favourable.

The Flesh is, in general, whitish, but red in the Centre. It parts freely from the Stone, and is very well tasted. With this we shall close the Catalogue of the present Week.

CHAP. II.

The Care and Management of Fruit-Trees.

AS we have directed the raising some Kinds of Stocks for Fruit-Trees, from the Kernel, we are to remind the Gardener that now is his Time for preparing for that important Article.

The Stones of the Green Gage and Red-wheat Plum should now be preserved against the Time of Sowing.

To this Purpose, fill a deal Box, one third Part with Sand; strew a Quantity of the Stones upon it, and cover them with more Sand: then strew on more Stones, and upon them more Sand.

In this Manner the Box is to be filled up, but it is a good Rule never to let there be more than three, or at the most four Layers of the Stones, and to let the upper one be covered three Inches. In this Manner they will very well keep till the Spring; but for Fear of Vermin there should always be a Trap or two set about the Box.

This Preparation being made for raising new Trees, let the Gardener come to the Use of his old ones.

Let him this Week prune the Apricots and Nectarines.

The Generality of Gardeners look upon the

Method of pruning the Peach, Nectarine and Apricot to be just the same; but there is a Difference in Nature, which should make a Distinction in their Practice.

In pruning the Apricot let particular Regard be had to the Autumnal Shoots, and to the Collateral ones, from the Sides of those of the same Summer's Growth; for those on the Apricot have fewer Buds at first than those of the Peach; and they are also more liable to be killed in Winter.

When the Autumnal Shoots proceed from the Ends of others, let the Gardener look for the Joint. This he will easily discover by the Difference of Colour, and let him take it off just below. This depends upon a certain Observation, That the Part above is very likely to fail, and the Part below will always bear.

Where there grow Autumn Shoots from new Horizontals, in Places where Bearers are wanted, they must be nail'd up to the Wall without shortening, for that usually kills the small Branches of the Apricot.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

CHAP. I.

Products now in Season.

WE have declar'd against the vulgar Method of repeating every Week to the Gardener the Names of those common Products of the Kitchen-Ground, which the meanest Labourer must know, as well as ourselves, to be in Season; and we have therefore only to observe here, that Mushrooms, which begin to be scarce from the

Fields, continue abundantly to be supply'd from the Beds made and manag'd as we have directed; and that for those who have their particular Tastes, there are Skirrets, Scorzonera, and *Spanish* Radishes. There are also Parsley-Roots, Cardoons, Fenchia, and Celeri; and the Cauliflower Broccoli, Borecole, and Turnep-rooted Cabbage.



CHAP. II.

The Care and Management of the Kitchen-Garden Ground for this Week.

WE mentioned in the last Week the preparing for a Hot-Bed, to raise Winter Asparagus, and it is now fit to direct the Gardener in the Management of it. We suppose him, on that Intimation, to have got ready a sufficient Quantity of new Dung, and to have laid in a Heap for a Week to ferment. He is now to enter upon the Use of it.

The Earth is to be open'd to the Breadth of a common Frame, and the Length of two, three, four, or more, according to the Quantity of Asparagus intended to be rais'd in this Opening of the Ground. The Dung is to be laid; and pil'd up in an even and orderly Manner, to the Height of forty Inches. Let the Surface be laid smooth, and beat even, and then spread over it a Covering of the richest Mould from the Garden, eight Inches thick.

Lay this perfectly even, give it a little sprinkling of Water, and then bring in the Roots for planting.

The Asparagus Roots, for this Purpose, must be two Years old from the Seed-Bed, and in perfect good Order and growing Condition; for a Fault in that Point can never be mended.

A Ridge of Mould must be rais'd a Finger's Length in Height, and against this the Asparagus Roots must be planted evenly, and so close as to touch.

Their Bud must be plac'd carefully upward; and when all the Roots are thus planted, there must be a Covering of three Quarters of an Inch of the same fine Mould sifted over them.

The Roots being thus planted, the whole Care is to keep the Bed of a moderate Degree of Heat, for they will come to no good, if that be either too much or too little.

Every Gardener knows how to try this, by means of a Stick. This must be above a Yard

long, and sharp-pointed; and it must be thrust down perpendicular into the Centre of the Bed.

At Times it must be pull'd up, and the Bottom of it must be felt in the Hand.

If the Bed be too hot, a thick Stick must be thrust into it sideways, in several Places; and Openings thus made to let in the Air, and let out the Steam: this will soon reduce the Heat to a due Degree.

If the Bottom of the Stick be not hot enough, lay some fresh Litter up against the Sides: this will set it to fermenting, and the Stick will shew how the Heat encreases to a due Degree.

When the Bed is too cold, it must be well cover'd; and, when too hot, it must have a great deal of Air.

The Bed being thus brought to its due Temper, the Roots will begin soon to sprout; and the whole Care then lies in Earthing the Shoots sufficiently.

As soon as they begin to appear above the Surface, another Covering of two Inches of the same fine Mould must be sifted over them; and when they have risen to the Top of that, there must be a fresh Parcel of two Inches and a half more. Thus there will be six Inches and a half of Mould above the Roots; and shooting thro' this, they will be of a due Length for cutting.

The Frames must be rais'd to the proper Height; and in bad Weather the Glasses must be covered with Mats or Cloths. In this Manner the Asparagus will rise in Abundance, and will be as good as any Art can make it at so unfavourable a Season: but, at the best, 'tis very much inferior to what rises naturally in the Spring.

This Method differs in several Particulars from what is commonly practis'd; but Experience shews it to succeed better; and we have therefore given it in the Way we have found most successful.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER VIII.

For the Third Week in OCTOBER.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. GOLDEN FOX-GLOVE.

Octob.
P. VIII.
Fig. 1.

FEW Plants better deserve than this their Place in the Collections of the Curious: not only the Flowers and Leaves have their Beauty, but the very Stem and Branches.

The Flowers, tho' singular in their Form, retain so much of the *Fox-Glove* Character, that notwithstanding the Difference in their Opening, and the Diversity of their Manner of Growth, most Authors who have nam'd the Plant have refer'd it to that Genus.

PLUKENET calls it *Digitali affinis*: and COMEELINE, *Digitalis Acanthoides*, led to this by the peculiar Shape of the Flower, somewhat resembling that of the *Acanthus*, describ'd in our Fourth Number.

The Gardeners call it *Matera*, its *Indian* Name. LINNÆUS, when he publish'd the *Cliffort* Garden, rank'd it with the *Gesneria*; but, upon more Examination, he ranges it in his *Species Plantarum* with the *Digitalis*; and calls it, in Distinction from the others, *Digitalis calycinis foliolis lanceolatis corollis bilabiatis acutis caule fruticoso*: Shrubby Fox-Glove, with the little Leaves at the Cup lanceolated; and with the Flowers bilabiated and acute.

Our Description of the Plant will make these Terms of LINNÆUS familiar, and better supply the Place of a dry Explanation.

Numb. VIII.

The Plant is two Foot high: the Root is brown, divided and spreading; and the main Stem is purplish. This is of a woody Hardness, and sends out, with good Culture, several Branches. They have a red Bark, but obscur'd by a white Cottony Matter that hangs loosely over them.

The Leaves are numerous, and have no Footstalks. They are long, sharp-pointed, serrated, and of a fresh green Colour, which a light Hairyness renders greyish and silvery.

The Flowers are large, and plac'd in long and crowded Spikes: they are so divided as to mimic the labiated Form; and their Colour is a bright and pure gold yellow.

Each Flower has its separate Cup, and that is divided into five Segments, of which the uppermost stands separate from the others; and is narrower and more pointed. In the Middle of the Flower are plac'd four Filaments, of which two are longer than the others, and in their Centre stands a single Style.

The Flower falling, there appears an oval Seed-vessel, in which, when ripe, are contain'd many small Seeds in two Cells.

We have before acquainted the Student with the Fourteenth Class in the LINNÆAN System: it comprehends those Plants in whose Flower there

Octob.

Octob. are four Filaments; two longer, and thence considered as more essential in the Impregnation of the Seeds, than the others. The Title is *Didynamia*; this Plant belongs to it. And as the Seeds have a Capsule, it is referred to the second Section of that Class, the *Angiospermia*.

It is a Native of the *Canary Islands*, where it grows in rotten Soils that have some Shelter. It there flowers all the Year, and with good Management will do nearly the same with us.

Most Flowers contain in their Base a Honey Juice: but this shews something of that Kind more distinguishably than almost any other; but under a particular Condition. Where it is a Native, there continually stands in the Centre of each Flower a large Drop of a clear clammy Liquor of an extremely bitter Taste. With us the Drop is smaller, but it has the same Bitterness; and when at its full Bigness it will drop from the Flower. This is particular, but the whole Plant is bitter.

Culture of the GOLDEN FOX-GLOVE.

Nature, and a Knowledge of its proper Soil in the *Canaries*, teach the Gardener how he is to manage this Plant.

It is to be raised from Seeds; and those ripen'd in *Europe* will produce it: but as on all other Occasions, when there is Opportunity of having them from the natural Place of Growth it is better.

Which ever Way they come, they must be sowed

early in Spring upon a moderate Hot-Bed, Octob. and raised by the common Culture given to Plants so propagated, all that is particular is the Soil.

This the common Writers on Gardening order to be light and sandy; and it is therefore the Plants with us never reach fully their natural Size or Beauty.

When they have some Strength in the Seed hot Bed they must be planted out into Pots, and these set in another hot Bed, that they may the more freely root, and send up new Shoots from the Sides of the original Stem; for if that be prevented now by a careless Management, they will sometimes run up with a single Stalk, and lose much of the Beauty.

They must in this new hot Bed be sheltered from the Sun, till they have taken Root; then exposed by Degrees to the Air; and at last having been removed into larger Pots, they are to be set among the Green-house Plants for Summer, and housed with them in Winter.

The proper Soil for them is that which will come nearest what they have in Nature; and this is to be made of Garden-Mould, Wood Earth, and Pond or River Mud.

Various Trials have shewn, that there is no better Proportion for their Mixture than to allow equal Parts of each; and in this they will with frequent and moderate Waterings flower as in their natural Climate, from *June* till this Season, or later.

2. W H I T E C E Y L O N P L U M B A G O.

P. VIII.
Fig. 2.

The Singularity of this Plant has given it a Place in many Gardens, and it is very worthy to be received into all.

Its Resemblance to the *Lychnis* Kind has occasioned some Writers to refer it to that Genus; but by the more correct it is ascribed to the *Plumbago*, whose Character it perfectly possesses.

COMMELINE has called it *Lychnis indica spicata Ocymastri foliis*. The great *English* Naturalist Sir HANS SLOANE, calls it *Dentillaria Lychnoides*.

Dentillaria is a Name given by many to *Plumbago*; therefore he referred it to its right Place.

LINNÆUS and VAN ROYEN join in calling it *Plumbago foliis petiolatis*: *Plumbago* with the Leaves on Foot-stalks: the lower Leaves having this Character, though on the upper Part of the Plant, and near the Flowers, they are often sessile.

The Plant is two or three Foot high, and has a wild but not unpleasing Irregularity in its Manner of growing. The Root is thick, divided, brown; and to the Taste violently acrid, and as it were burning. The Stalk is slender, green, and divided often into three or four Branches. The Leaves are large, and both their Form and Colour are pleasing; they are broad and divided, and of a shining green.

The Flowers stand at the Tops of all the

Branches in long loose Spikes, and have a singular Appearance. They are large, and of a snowy white, and thence are not without their Beauty; but their Form and Manner of Growth excite the Attention more.

Each has its Cup, which is oblong, extremely rough and hairy, of a tubular Form, marked with five Ridges, and divided at the Top into as many Segments.

From this runs out the Flower in Form of a long and slender Tube, spread wide at the Top, and there divided into five oval Segments: in the Centre of the Flower stand five slender Filaments, with oblong little Buttons; and among them rises a single Style. The Cup remains after the Flower is fallen, and serves in the Place of a Seed Vessel, containing a single oval Seed.

The Number of Filaments, and their regular Growth and Disposition shew the Student to what Class this Plant belongs in the LINNÆAN System. His fifth is called Pentandria, because there are in each Flower five regular Filaments; and this is one of those Plants.

The first Section of that Class comprehends the Monogynia, or those which have the female Part single; and the Style in this Flower being but one, shews it to belong also to that Subdivision.

The

Oftob.

The Plant is a Native of the *East* and *West-Indies*, where it flowers all Summer; and it will live with us and flower abundantly, if allow'd a proper Soil, and the common Culture given to the Natives of those warmer Climates.

Culture of the CEYLON PLUMBAGO.

As the Root is perennial, the Plant may be propagated from its separated Parts; where it is once well establish'd: but it must first be rais'd from Seeds. These do not often ripen in *Europe*; and as they may be easily obtain'd from *Jamaica*, 'tis best to depend on them at home.

Early in Spring they must be sown upon a moderate Hot-Bed.

When the Plants are risen to a little more than two Inches, they must be transplanted into another Hot-Bed, at four Inches Distance; and when they have in this acquired a considerable Strength, they are to be planted out into small Pots.

Common Garden-Mould serves for the Covering of the two Hot-Beds; but for the Pots there should be prepar'd an artificial Soil, such as the

Plant naturally loves: this must be light and mellow. It may be very well compos'd of River-Mud and Wood-Earth, each equal Quantities, and half the Quantity of one of them of Cow-Dung. This being mix'd and mellow'd in Time, must be put into the small Pots, and one of the Plants set in each.

These must have a very light and careful Watering, and then they must be set nearly up to the Tops of the Pots in a Bark-Bed, to make them strike Root freely, and push Fibres for a good Growth.

From this Place, when very well establish'd in their Pots, they must be remov'd into a Frame with a Glass Cover; and there, by Degrees, inur'd to the Air.

After this, larger Pots must be prepar'd for them, and they must be carefully planted into these in the same artificial Soil; and here they may remain.

They are to be set out among the Green-house Plants in Summer; and hous'd in Winter in the Stove. They will, under this Management, flower happily, and the Singularity will render them very agreeable.

3. VELVET BINDWEED.

P.VIII.
Fig. 3.

We raise, for the Decoration of our Gardens, various Kinds of *Bindweed* or *Convolvulus*, and there is not one of them without its Beauty; but the Plant here propos'd to the Reader excels all by its vast Growth, and its perpetual Verdure.

The Characters of this Genus are so strongly mark'd upon all the Plants, that none have refer'd this to any other.

PLUKENET has call'd it, *Convolvulus Canariensis foliis longioribus mollioribus & incanis*. LINNÆUS, *Convolvulus foliis cordatis pubescentibus caule perenni villosa pedunculis multifloris*: Perennial hairy-stalk Bind-weed, with downy heart-shap'd Leaves, and many Flowers on the same Foot-stalk.

This last Character is, however, uncertain; for tho' the Flowers often grow cluster'd in that Manner: they sometimes stand singly.

The Root is thick, divided, furnish'd with many Fibres, and spreading.

The Stalk is round, hairy, and naturally purple: it rises, where it can climb, to the Height of twenty Foot, and covers its Support with innumerable Leaves and Branches.

The Leaves are plac'd alternately, and they are of a distinguish'd Elegance. They have long redish Footstalks, and their Shape is heart-like: they are broad and lightly indented at the Base; wav'd at the Edges; and sharp-pointed.

They are of a pale but not unpleasing green, thick-covered with a greyish silvery Down. This gives them a hoary Aspect, very pleasing to the Eye; and to the Touch a Softness equal to that of Velvet.

They appear various, according to their Age; for the Plant is covered with them at all Seasons.

Toward the Bottom they are often red, as they decay; and on the rest of the Plant a Part of them are softer and paler; these are the younger ones; and a Part of longer standing, dusky in their Colour, and to the Touch more harsh.

On these last the Ribs and Veins are most conspicuous, and they are often purplish.

The Flowers are large, and where the Plant is well establish'd, very numerous.

Some stand singly, others five, six, or more, together: and their Colour is a snowy white, more or less ting'd with red.

Their Form is broad, and spread out like a Bell. Each is form'd of a single Petal, expanding from the Base into this wide Rim, and folded in various Places. It stands in a small Cup, divided into five light Segments; and in its Centre rise also five short Filaments, crown'd with oval flatted Buttons. The Style is plac'd single among these, but is split at the Top; and the Seeds are contain'd in a divided Capsule.

The Botanist, while he admires the Beauty of this Flower, will see in its Filaments and Style the Place it claims in the LINNÆAN System. It is one of the first Section of his Fifth Class, the *Pentandria Monogynia*, explain'd in the preceding Article.

It is a Native of the *Canary Islands*; but it will live and flower, with moderate Care, in our Climate. There it delights in woody Places, and ascends, as Ivy, the tallest Trees: with us it must be supported by Poles properly planted; and Prudence directs the restraining of it far within its natural Limits.

Culture

Octob.

Culture of the VELVET BINDWEED.

It is a Green-house Plant, free to the Air in Summer, and only requiring Shelter against Frosts: and it may be rais'd from Seeds, or propagated by laying the Branches.

The former Method raises the finest Plants, when the Seeds can be obtain'd in their Perfection: but the other furnishes very good ones, and they will sooner come to flower.

If the Seeds are prefer'd, they must be had fresh, and the Plants rais'd, as we have directed for the *Plumbago*, just describ'd, in Hot Beds.

In the other Method little Time is lost, for the Branches take Root easily. They must be laid in *March*, covered four Inches with Earth, and assisted in Rooting by frequent Waterings. In the *September* following they may be taken from the Mother-Plant.

Each of these must have a large Pot. The Soil that our Experience has shewn best to suit them, is this: Mix three Barrows of light Earth taken from under the Turf in a high Pasture, with two of Wood-pile Earth, and one Bushel of Sheep's-Dung. Time mellows and prepares these Mixtures; and as there is always Notice of their being wanted, the Advantage should be taken.

Let the prudent Gardener, at the same Time he lays the Branches of this Plant, pile up in an open Place this Mixture. Let him once in a

Month break and turn it; to destroy Weeds, and open it to the Rains and Dews; and by that Time his Layers are fit to be remov'd, it will be well mellow'd, and fit for their Reception.

In the Centre of each Pot must be set a Pole, seven Foot in length, and taper to the Top; and the great Care will be to secure this firmly.

Then plant a Layer in the Pot; so placing it that the rooted Part lie free, and be very well cover'd; and the Shoot rise near the Pole.

Let the Pot be fill'd within an Inch with this Soil, and the young Shoot ty'd up to it with a Piece of green Worsted. Then give it a gentle Watering, and place it in the Shade; defending it continually from the Sun, and frequently repeating the Watering till it has taken very good Root.

After this place it among the Green-house Shrubs for the short Remainder of the Season they are to stand out; and afterwards remove it under Shelter with them.

No more than the common Care of these Plants will after this be needed: it will make its own Way up the Pole; and when it can rise no higher, will send out the more Branches.

A Year from the planting it out, it will flower, and continue to do so abundantly.

This is an Advantage of the Layers over the Seedlings; for they sometimes do not come to flower before the fourth or the fifth Year.

4. TRIFOLIATE ERYTHRINA.

P.VIII. Few of the Species we cultivate with our best Care, deserve the Labour and Attention more than this; distinguish'd for its Beauty even by Savages; and celebrated by some peculiar Name, importing its Lustre or its Singularity in almost every known Language.

Our People call it the Coral Tree, a Name given it from the high red and glossy Surface of the Flowers, resembling polish'd Coral.

The common Writers, after *Caspar Bauhine*, have called it *Coralia* and *Silqua Sylvestris Spinosa*. COMMELIN, and some others, *Coral Arbor*: TOURNEFORT, and his Followers, *Coralodendrum*: and LINNÆUS, and with him the later and more correct Botanists, *Erythrina*; a Name deriv'd from the *Greek*, and expressing in the same Manner as the other, the fine red of the Flower.

In other Nations it is call'd by Names expressing the Scarlet Tree, the Elephant Tree, and Coral Blossom.

It grows naturally to a considerable Height; and with us forms a tall and very elegant Shrub.

The Root is divided, spreading, and full of Fibres.

The Stem is brown, and its Wood brittle. The Branches are numerous, and variously speckled; and their Bark is grey.

They are arm'd with sharp and fine Thorns.

The Leaves are handsome in themselves, and very beautifully dispos'd. Three grow on every Footstalk, and they are of a Heart-like Shape, broad, and lightly hollow'd at the Base, and terminated by an obtuse End.

Their Colour is a very bright green on the upper Side, and a paler green underneath, and they are strongly mark'd with Ribs.

The Flowers are very numerous, large, and of the finest red; of a polish'd Surface, and, in a full Sun, almost too glossy to be look'd upon.

They stand in a very beautiful Manner upon the Tops of the Branches. A great Number surround them at certain Distances, in circular Clusters; and these rising above one another to a great Height, form an elegant and very long Spike.

Each Flower is form'd of four Petals, and is, tho' in a very irregular Manner, truly of the *papilionaceous* Kind, consisting of a *Vexillum*, *Alæ*, and *Carina*; as we have before explain'd the general Structure of those Flowers which are call'd by this Name.

In this the *Vexillum* is of an extraordinary and immoderate Length: its Sides bend downwards, and the Whole is also crooked; its Point turning upwards.

The *Alæ* and *Carina* are extremely small, so that

Octob. that the upper Petal makes, in a Manner, the whole Flower.

In the Centre rise ten Filaments: nine of these are united in their Bodies, and one lies over them singly. These are all crown'd with Arrow-headed Buttons. The Style which rises among these is single.

The Cup, in which the Flower is plac'd, is of a Bell-like Shape, and divided into two Lips: and the Fruit that succeeds it is an extremely long Pod, swelling out at the Places where the Seeds are lodg'd, and pointed at the End.

The Seeds themselves are Kidney-shap'd, and large.

The Student, who has been already inform'd of the Characters of the *diadelphous* Class, the Seventeenth in the LINNÆAN System, will know this Plant belongs to it; all being comprehended in its Character, which have the Filaments plac'd in two Assortments. As the Marks of the Sections are, in that Class, taken from the Number of those Filaments, this belongs to the *decandrous* Kind, which compose the third Sub-division.

It is a Native of the *East* and *West-Indies*, and there is green throughout all the Year. With us its Leaves fall annually, but they are soon renew'd, and very beautiful.

Culture of the TRIFOLIATE ERYTHRINA.

The Seeds of this Species are large, and of a firm Substance: so that they may be easily collected, and will come in a growing Condition into *Europe* with very little Care; and from these it is best to raise it.

They must be sown in Spring in the usual Manner, upon a Hot-Bed. When the Plants have some Strength, they must be transplanted into another; and thence into Pots, in which they are to be harden'd by Degrees to the Air during Summer, and at the Approach of cold Weather remov'd into the Stove.

Thus they will rise, with Care and Patience, into handsome Shrubs.

The readier Way of propagating them is by Cuttings, from such as have been thus rais'd here.

These will freely root if well manag'd; and the best Method of doing it is this: let them be taken from thriving Shrubs, planted with Care in Pots, and these set up to the Rim in a Bark-Bed. Here they must be water'd every Day, and shaded till they strike Root.

The End of *May* is the best Time for doing this.

Half a Dozen Cuttings may be set in each Pot; and in the Beginning of *August* they will have shot so good Root, that they may be remov'd each into a separate Pot.

These must be again set in a Tan-Bed, to help their Rooting.

They are now to be considered just as Plants raised from Seed, and to be treated every Way like them.

The Stove must preserve them from the Severity of our Winters; and about the third Year they will flower: sometimes sooner.

The Soil I have found best to suit with this Shrub is this: Two Parts dry Pasture Earth, and one of rotten Garden-Mould: and I have found that, tho' nothing is so beneficial to it as frequent Watering, yet it must be a little at a Time, for otherwise it is destructive.

5. CRIMSON PENTAPETES.

P.VIII. All who have written of this Plant, have celebrated its Beauty; but few have known where to place it, or by what Name to call it.

The Resemblance it bears to the Mallow Kind, has caus'd PLUKENET and RAY to range it among the *Alceæ*; and the Form and Lustre of its Flower led COMMELINE to call it a *Blattaria*, or *Moth Mullein*.

BREYNIIUS has join'd with RAY and PLUKENET in calling it an *Alcea*: and RUYSCH and KIGORLARIUS, in their Commentaries upon that Author, say it is evident, *Luce meridiana clarius*, that it belongs not to the *Blattaria*, but *Alcea* Family.

Mr. MILLER has avoided Censure on this Head, by not naming the Plant, tho' an Ornament to the *Dutch* and *French* Gardens, and not wholly unknown in our own.

All have err'd about it till the Time of LINNÆUS. He has indeed shewn, *Luce meridiana clarius*, that it belongs neither to the *Blattaria*, *Alcea*, or any other known Kind, but stands distinguish'd by peculiar Characters; and he has nam'd it *Pentapetes*: distinguishing it farther by the Addition of *Folius*
Nº 8.

hastato lanceolatis serratis: Pentapetes, with hastato-lanceolated and serrated Leaves.

This Compound Term is very expressive of the peculiar Form of the Leaves, and will be better understood from their Shape, in our annexed Figure, than from any Explanation in Words.

The Plant grows with a pleasing Wildness, to the Height of two or three Feet.

The Root is fibrous. The Stalk is rib'd, and of a greyish green, fresher toward the Top, and at the Bottom often purplish. It is of a firm Substance, and sends out numerous Branches.

The Leaves are plac'd irregularly, and they are very numerous.

Their Colour is a deep but shining green, and their Form very singular and handsome.

They are broadest at the Base, long in Proportion to their Breadth, jagged deeply and irregularly at the Edges, and continued to a very long and slender Point.

The Flowers are very conspicuous: they are large, and of a most bright and elegant red: they rise from the Bosoms of the Leaves on the upper
A a Part

Octob. Part of the Plant, and they have slender Foot-stalks.

Each is compos'd of five large Petals, and in its Centre fifteen Filaments. These in their lower Part unite and form a tubular Body; and at their Tops are crown'd with upright pointed Antheræ.

Beside these, which are the proper and perfect Stamina or Filaments of the Flower, there are five others, crooked, barren, and of a peculiar Form. These rise from the tubular Body, form'd by the proper Stamina, and stand regularly between threes of them.

The Style is single, and its Top or Stigma thick.

This singular Flower stands in a Cup, form'd of five slender and rough long Leaves, woolly within; and it is succeeded by a hard and almost woody Fruit, which holds in several Cells a Number of flat Seeds, edg'd with Membranes.

The Structure of the Flower, while it shews plainly that the Plant is neither a *Blattaria* nor an *Alcea*, will at first Sight perhaps somewhat perplex our Student; but we have told him how to dispose it.

He will remember, that after the Number twelve, the Filaments of a Flower are not counted to mark its Character: for even the *Icosandria*, tho' the literal Translation of the Word would say twenty Filaments, is not limited to that or any other peculiar Number, so it be more than twelve: but as the Number is of no Use in this Matter, he will remember we have acquainted him this

growing together of the Filaments into a Tube, is the Character of a peculiar Class, the *Monadelphia*.

To this Class belongs the *Pentapetes*; and as these Filaments are numerous, it is of the *polyandrous* Section of that Class.

Culture of the CRIMSON PENTAPETES.

It is a Native of *Ceylon*, and of some Parts of the *West-Indies*, and naturally grows in rich Soils: this points out the Nature of its Culture, which depends on two Circumstances, a rich Earth and a due Degree of Warmth.

With regard to the Soil, no artificial Compost need be made: the best and richest Garden-Mould is fitter for the Use than any other. The Method of raising it must be from Seeds, which may be obtain'd from its natural Place of Growth, or from Plants rais'd here from such; for with due Care it ripens them perfectly.

These Seeds must be sown early in Spring upon a moderate Hot-Bed: the Plants must be remov'd from that to a second, and from that second Hot-Bed into separate Pots; and these must be plac'd in a Tan-Bed to root them. After this, they must, by Degrees, be harden'd to the Summer Air, and early against Winter remov'd into the Stove.

It will flower the first Months of Autumn, and ripen Seeds before Winter, while other Flowers are glittering in all their Lustre in remote Parts of the Plant.

6. SCARLET LANTANA.

P. VIII. We need not recommend to the Gardener a Shrub with which he is so well acquainted, as this. Its Beauty is so universally acknowledg'd, that few Collections of Exotics are without it.

Its common Name, in the *West-Indies*, is *Wild Sage*; a very wild Term, by which they express also some other Kinds.

In our Gardens 'tis known by its *Indian* Name, *Camara*.

The generality of Writers have rank'd it with the *Viburnums*; but by the more correct is distinguish'd under this Name of *Lantana*.

LINNÆUS calls it, *Lantana foliis oppositis, caule inermi ramoso, floribus capitato umbellatis*: Branched and naked-stalk'd *Lantana*, with Leaves plac'd opposite, and Flowers in umbellated Heads.

The Author uses the Term *inermis*, in this Name, by way of Distinction from *aculeatus*; another Species of the same Genus, being arm'd with Thorns.

It is a handsome Shrub, of four Foot high, or more. The Root is woody, covered with a whitish Bark, and hung about with Fibres.

The main Stem has a rough greyish brown Bark, and is irregular in Shape. The young Shoots are tender, downy, angulated, and often reddish.

The Leaves please the Eye both by their Form and Disposition. They are broad at the Base, serrated at the Edges, sharp-pointed, rough on the Surface, of an agreeable pale green, and hairy. They stand in Pairs, and they have slender reddish Foot-stalks.

The Flowers terminate all the Branches in great rounded Tufts, and they are naturally of a very elegant Scarlet; but sometimes, in the same Tuft, we see some of them of this fine and elegant red, others Orange-colour'd, and some of a fleshy Hue, a paler yellow, or a whitish.

All the Changes between Scarlet and Orange, and all between either of these Colours and white, are common to the Flowers in the same Cluster, in its native Soil; and it retains a great deal of the same pleasing Variety here.

Each Flower, when examined separately, is seen to be form'd of a single Petal: this is small and tubular at the Base, and at the Rim spreads into four broad Segments.

The Cup, in which the Flower stands, is very short, of a tubular Form, and lightly dented in four Places.

The Fruit is of the Berry Kind, but dry: it is roundish in Shape, and contains a single Stone, in which are two Kernels lodg'd in separate Cells.

The Student who desires to know the Class to which



Golden Foryglow



White Ceylon Plumbago



Velvet Bindweed



Trifoliate Erythrina



Crimson Pentapetes



*Scarlet Lantana
'callid' Camara*

Octob. which this elegant Shrub belongs in the LINNEAN System, must separate a Flower and tear it open, for in the entire State, little is seen that could lead him to the Conjecture.

He will find in the Middle of the tubular Part, four very minute Filaments; of which, two rise higher than the others.

This gives the Class: for we have before informed the Student, that when there are in a Flower, three longer and two shorter Filaments, it belongs to the fourteenth, or *Didynamious* Tribe.

The Style is single in this Flower, and is very slender, and no longer than the Filaments: but nothing can be more singular than the Form and Situation of its Stigma. This is placed obliquely on the Head of the Style, and is hooked and sharp downwards. This is the most distinguishing Mark of the Genus.

Culture of the SCARLET LANTANA.

The Gardener has in this, as in many other Instances, his Choice to raise the Plant from Seeds or Cuttings: these last grow freely, and are the most expeditious Method; but the Seeds always afford the finest Plants.

The Seeds are to be sown in a hot Bed early in the Spring, and at the same Time a proper Soil must be prepared for the Reception of his Plants. This should be a Mixture of four Barrows of rich Garden Mould, one of dry and fresh Pasture Earth, and one of Sheeps Dung. While this is mellowing the Plants will rise.

They must be removed from a first to a second hot Bed; thence into Pots filled with this

Soil; and in these they must be carried into the Stove, and watered carefully till rooted. Octob.

After this, the Summer being well advanced, and the Weather at the warmest, they must be by Degrees hardened to the Air, and then exposed to it from the Beginning of *August* till the Middle or latter End of *September*.

This will give them Strength and Firmness; and they are then to be defended in the Stove through Winter.

From Time to Time they must have gentle Waterings; and as the succeeding Summer advances, they must be by Degrees introduced again into the open Air, and finally placed out till Autumn.

The Method of raising the Plants by Cuttings differs in nothing essential from this. The same Soil must be used, and the Cuttings being planted in Pots must be set in a Bark Bed, watered and shaded to promote their rooting.

From the first Pots they must be transplanted singly into others filled with the same Soil; and in all Respects treated as at first till well rooted; and then they are to be managed as we have directed for the Seedlings, when come to the same Degree of Strength.

Toward Autumn the second Year they will begin to bud for flowering. The first Attempt for this is usually made in the open Air; and it is to be watched: for on the due Management of this Period depends the Continuance of the flowering. They must be watered every Day, and well defended from cold Winds; and when by this Means they have got into a good Way of flowering, they will keep it throughout the greatest Part of Winter in the Stove, and appear second to very few Things there in Beauty.

C H A P. II.

The Management of the Flower-Garden, for the third Week in October.

THE Borders of the Flower-Garden we left the preceding Week perfectly cleaned, and with the last Addition of perennial Plants. Now let the Gardener consider, whether in any Place beside there may be any thing added: whether a new Border may be formed; an old one converted to a better Use; or in any Part of the Ground an Addition made from the same Resource.

This is the Time for doing whatsoever may be proper in that Way; and so much Beauty is to be procured for the succeeding Year, by a little Labour now, that it is unpardonable to omit it.

We named in the last Week's Account several hardy Plants fit for this Purpose, which it was proper then to put into the Ground; and shall here add to that List some others which will succeed very well being planted now.

Several Kinds of Campanulas, which make a very handsome Appearance in their Season, may be transplanted at this Time; as also the several Kinds of Hollyhock, Pionies, horned Poppies, Lychnideas and Rose Campions, Asphodels and Spider Wort.

These Kinds properly intermixed will give a happy Variety by the Diversity of their Heights and Colours, and will alone make a very agreeable Plantation.

The careful Gardener has, when their Leaves decayed at the End of their flowering Season, taken up the Roots of his Martagons, and Orange Lilly, and many other of this Kind, now is the Time for putting them again into the Earth.

The Time they have been out of the Ground has been altogether to their Advantage; and they

Octob. they will now just be ready for shooting the first Fibres toward their succeeding flowering.

Next let the Gardener visit his Beds of Seedlings, for a Succession of bulbous rooted Flowers. Two Things are required: to clear them from Weeds, which would exhaust the Earth of the Nourishment intended for their Support; and to defend them from the Frosts that would destroy them. A little Trouble answers the Purpose in each Respect; and though it is some Time before these Seedlings come to flower, the Number and the Variety of them, when they are arrived at that Condition, amply repays the Trouble.

As for their Preservation now, the first Part is to be effected by pulling up all Weeds by Hand; and this done, some fine Earth is to be sifted over them for the other.

This will cover them from the Inclemency of the Season, and strengthen them in the Ground.

The LILAC is a pretty Shrub, and if kept in due Order has great Beauty in its Time of flowering. The principal Disadvantage attending it is the great Number of Suckers from the Root; and this is the Season for removing them.

We see a Forest of these about the Roots of Lilacs in ill-managed Gardens; and from this Cause the Tree is sickly, and flowers languidly. The Nourishment which should swell the Blossoms is drawn by these Suckers, which are there useless; but there is not one of them but might make a handsome Tree like its Parent.

This Week take them all carefully off, and have a Piece of Ground in the Seminary dug ready to receive them: plant them separately, and leave them to Time and their own Vigour.

They will only require to be sometimes cleared of Weeds, and in a few Seasons they will very amply reward the Labour.

This is a Season, when the Decay of Leaves, on all but Ever-greens begins. For a few Weeks it affords an agreeable Prospect to the Eye, from the different Colours: some fade sooner, and some later; and while one Kind changes its Green for a Yellow, another glows in its Decay with Purple.

The Imagination checks the Pleasure of the Sense in this, by recollecting that naked Branches follow.

Painters prefer this various Hue, to the too uniform Green of the perfect Summer; but the Gardener has other Considerations.

He sees the Beauty of his Plantations decaying; and the Verdure of his Grass, and Brightness of his Gravel are in Danger from the same Cause.

The Leaves will presently begin to fall, and every one that lies where it falls, leaves a Stain. They soon rot, and tinge in their decay every Thing near them.

Less Use is perhaps made of the Walks at this, than many other Seasons; but there is at no Time more Care required in cleaning them for this Reason.

When all is thus clean'd, planted, and secured; we shall lead the Gardener to another Part belonging to this Article of Pleasure. The Ma-

nagement of the Stove and Green-house Plants. Octob.

We have observed under the several Articles already nam'd, that as the Danger of Cold approaches, many Plants must be removed into their Shelter.

We have directed the chusing a dry Day, for bringing in the tenderer Kinds; cleaning their Stems, their Branches, and the Tubs and Pots in which they are planted.

It will be proper now to look over such again, to see if there be any dead Leaves then forgot, or any since decayed. These must be carefully picked off.

The Moss we then directed to be taken from the Top of the Earth in the Tubs, and we are now to instruct the Gardener to prevent the Growth of more.

This is a Mischief that very naturally happens where Plants are kept up, and it is of great Damage, as well as of an ill Look.

Let a Mixture of Cow-dung and Coal-ashes be well wrought together, and sprinkled over the Surface of the Earth in the Pots and Tubs. It will prevent the Growth of this hurtful Matter, and at the same Time strengthen the Soil.

The tenderer Kinds having been thus secured and strengthened, those which are a little hardier and are set out, must be taken into the House.

Of this Kind are several of the *African Geraniums*, *Solanums*, *Sisyrinchiums*, and many others. These will be in Danger, if they are permitted to stand out when the Nights grow frosty in any Degree.

A particular Care must be taken of these, for as they will bear the Air longer than others, so they require more of it.

When they are housed, they must have as much as can be safely given them at proper Times; otherwise, they grow sickly, their Leaves turn yellow, and they not only decay themselves, but spread an Infection among the rest of the Plants.

They must now and then have Water also, and they should be cleaned as the others.

All decayed Leaves should be picked off, and the Earth stirred lightly on the Surface of the Pots, and some of the same Mixture of Ashes and Cow-dung sprinkled over, and mixed in by breaking them together.

We have directed the taking many of the tenderer Plants early into the Stove, in speaking of their several Cultures.

There are a Number of these which very well bear the Summer out of Doors, and thrive the better for it with us, but can by no Means endure the first Colds of our Winter's approach.

The *Erythrina* and *Lantana* figured in this Number, are of this Kind; and many others. They are to be removed out of the open Air, on the first Cold; and it is too common a Practice to take them at once into the Stove: but this is so violent a Change, that Nature does not well bear it.

The best Method is upon the first Threats of Cold, to remove them into the Green-house, and from thence, after about ten Days, into the Stove.

This is the Season for their last Removal, and

Octob. and when they are thus taken into the Stove, they should be carefully look'd over, that

no decayed Leaves remain; and placed for the Octob. Winter.



S E C T. II.

The Business of the SEMINARY, for this Week.

WE have directed in the preceding Weeks, the planting of many Trees in the Seminary or Nursery, as well as in the various other Parts of the Ground.

One common Care is now required for them all, and we shall explain to the Gardener, what is the Danger, that he may neither omit, nor misapply the Remedy.

He sees new planted Shrubs and Trees, whether in the Garden or the Nursery, too often destroyed by the Frost: the Occasions are two; the Power of the Wind, and the Exposure of the Ground.

This is the best Season of all the Year, for the generality of Planting, but without Care, it may prove the worst.

The Advantage of it is, that the Roots will now send out new Fibres into the fresh broken Ground, and be well established by the Beginning of the succeeding Summer.

The Disadvantage that may follow is this, from Winds and Frost.

Let him therefore plant at the Time we have nam'd, and defend his Work from these Accidents.

Trees are planted in two Situations; in open Ground, or against Walls. Those in open Ground are most liable to Damage by Winds; but the others are not wholly secure from it.

They are shook and rocked about at the Time when they should be shooting out new Fibres: This either prevents their pushing them at all; or breaks them off as soon as formed; therefore unless prevented, the great Benefit is lost: Beside, that this rocking about of the Stem, opens the Ground, and admits the Frost.

Therefore, near every Tree transplanted in the open Ground, let there be driven a firm Stake, and to this let it be tyed with a Hay-band, or other soft Substance, that may hold it secure without galling it: and as to those near Walls, let them be at once nailed up to them.

This securing them from rocking, the next Care is to prevent the too great Exposure of the Ground.

Its Surface is bare and cold, but it is easy to cover and warm it: for this Purpose I have found nothing equal to the following Method.

Scatter over the Surface round the Stem of every new planted Tree, and among the whole Plantation, a Parcel of old woollen Rags, torn into small Pieces. Taylors Shreds will do, but Rags of Cloth that has been worn, are much better.

Nº. 8.

Over these, sprinkle some good Dung: and having spread the whole regularly, so as to cover the Surface, bring on some Brickbats, and lay one here and there to keep down the Dung and the Rags, that the Wind may not carry them away.

By this Means, the whole Body of the Ground not only about the Stems of the Trees, but between them will be kept warm and mellow.

The Winters Wet will dissolve, and carry into the Ground, the Salts, and other useful Parts of the Dung and Rags, and enrich it surprizingly.

In Spring, the Brickbats are to be taken off, and the Manure dug in.

There is not any Thing superior to the Effect of old woollen Rags, for the Encouragement of fresh planted Trees.

This I am sensible is a new Practice, but I write from Experience; and will answer for the Success, whoever uses it.

A great many Trees are to be raised in the Seminary for the Wilderness Plantation; and he who has true Taste, will never be without a Supply of the several handsome common Kinds; that he may place them in Hedges about his Ground for Ornament, or in waste Spots for Advantage. Several of these Kinds are to be sown now.

The Maple, tho' not a large, is, when well trained, a very handsome Tree: It gives a pleasing Variety in the Hedge; and its Wood may be valuable.

This is the Time of sowing it. The Seeds should be gathered when full ripe in Autumn; and being spread upon a Floor for a little Time to harden, they will be now fit for putting into the Ground.

Let them be scattered over a new dug Piece of Earth, and half an Inch of good Mould sifted over them. Throw a few Pieces of Furze-bush over the Ground, and so leave them to Nature.

The Oak, the Pride and Glory of our Kingdom, is to be raised in the same Manner. The Acorn ripens at the End of Summer, and the Principle of Growth in it is so strong, that it will shoot soon after, tho' not committed to the Ground, and with this Shoot it decays.

Therefore what Nature directs, let the Gardener follow, and take the right Advantage of this Vigour.

Let a Bed be dug for Acorns; and let Care be taken in the gathering of them. They should be chosen full ripe, and from a tall well shaped

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Tree;

Octob. Tree; for the Growth from them greatly depends on this.

When they have lain long enough to harden, but not so long as to begin their Shoot; let them be in the same Manner scattered over the Surface of the Ground, levelled for that Purpose. Then let them be covered three Quarters of an Inch with good Mould.

Spread some rotten Dung over this, and set Traps for Mice about the Ground. Thus the Acorns will be secured from their worst Enemies, and from all Danger.

This is the Time also for preparing for raising Holly from Seed.

The Berries are for this Purpose to be now committed to the Ground, but not in the Manner of sowing.

The tough and thick Juices of this Shrub, occasion its Shoot from the Seed to be very slow.

The Berries are to lie a great length of Time in the Earth, and they are so exposed to various Accidents.

The best Method is therefore to bury them at such a Depth, as shall place them out of Danger for a Part of the Time; and afterwards to sow them for growing.

This is found to answer the End, and it saves much Trouble.

For this Purpose, having a Quantity of Holly-berries of the present Year, gathered when of due Ripeness, and fit for Use; dig up a Yard's Breadth in the Ground a full Spade

Depth, and throw out all the Mould. Level the Bottom of this Opening, and cover it evenly and pretty thick with the Berries. Then break the Mould and cover them with it to the Level of the Surface; letting the Bed rise a little in the Middle, to throw off the Water: and thus leave them for the succeeding Year.

They will at this Depth in the Ground, be out of the Way of Vermine, and they will be all the Time preparing for Growth; so that being taken up at the same Season the next Year, and sowed in the usual Manner, they will shoot the following Spring.

We have mentioned two of the common Trees, and must not omit a third; which tho' common, is not less valuable, this is the Elm.

The best Method of propagating it, is by Layers; and the Nursery should not be without a Stool or two for this Purpose.

This Stool is a well rooted Stump of Elm, cut off near the Ground, that its Shoots may be of a due Height for convenient Laying.

This is the Time of performing it, and in this Case the Method is very easy.

The Earth is to be well dug about the Stool; the Shoots are to be laid in and pegged down, and covered four Inches.

The Moisture of the Ground at this Time, will promote their Rooting, and the Frosts will do them no Harm.

With this, we shall close the Business of the present Week in this Part of the Ground.

S E C T I O N III.

P O M O N A, or the F R U I T - G A R D E N.

C H A P I.

The Method of Gathering and Preserving Winter Pears.

THE Catalogue we gave of Fruits in Season for the last Week, may be understood as continued for this; the greater Part being such, as do not speedily decay.

We made it the more extensive, and included in it those several Kinds for this Purpose, that we might here enter upon the Article of gathering and preserving such Kinds as are capable of being kept throughout the whole, or a considerable Part of the Winter.

We have hitherto been able to direct the Gardener to furnish his Deserts from his Trees; but the Season is approaching, when they will yield nothing more.

This Part of an Entertainment, may, however, be then supply'd from the Store-room, and we are about to lay down the Method of providing for the doing that in the best possible Manner.

The Preservation of Winter-fruit depends solely upon two Things; the Manner of gathering, and the Method of curing them.

The latter is not well understood; and the former, by most of the Gardeners I know, is utterly disregarded.

A great many of the decayed Fruits we see in Winter, among the Kinds that might have been preserved better, have been destroyed by gathering at an improper Season; or by some Pinch in the taking them from the Tree.

These Accidents, especially if attended with ill keeping, bring on a Decay in Part, or entirely: and when this once begins, it spreads; not only in the same Fruit, but to all that lie about it.

Pears are a very considerable Article, in the List of autumnal Fruits that will keep for Winter; and they require a peculiar Care in the Time

of

Octob. of gathering. The autumnal Kinds must not be left on the Tree till full ripe; for then they are sure to eat mealy, and they will be in Danger to decay very soon.

Many of them are also naturally in some Soils rotten at the Heart, by that Time they are perceived outwardly to be ripe.

Let the Gardener have his Eye upon the Trees of his best Kinds of Winter Pears, and let him every Morning examine those which have fallen off, and also those on the Tree.

Let him cut open several of the fallings, and if he finds them sound and full grown, it is his Notice for beginning to gather: for it is the excellent Quality of some of these Kinds, to quit the Tree freely as soon as they are full grown; and before they are too mellow.

Let him gather from such Trees those which will come off easily. All the Pears do not acquire this Degree of Maturity together; therefore let the Gardener, when he has received the Signal, gather with Discretion.

Let him chuse the Morning of a fine Day, and wait till the Dew is perfectly off the Fruit, and its Surface is entirely dry. If this do not happen in the Morning, let him stay till Noon or longer. Then let him gently touch the best Fruits, and raise them a little upwards.

If they come off, 'tis well; if not, no Force must be used; those which do not quit the Branch thus must remain longer.

If these Kind of Pears be gathered before they will easily quit the Tree, they will shrivel up in lying, and never have their full Flavour; and if they are neglected when fit, they will fall from the Branches.

Three Days afterwards let him visit the same Tree again; and those which would not come off at first, perhaps then will: if not, let him leave them longer. He must not grudge the Trouble of making three or four Gatherings from a good Tree; for the Fruit thus carefully pulled, may, with the Keeping we shall direct, be preserved till the next Season.

As the Pears are gathered carry them to an airy Room: lay them carefully in a Heap, and cover them with a Blanket. This will make them sweat, and bring on again the Fermentation in their Juices: and by this they are rendered fit for keeping through the Year.

The Fermentation would have come on at some Time, whether this Method were used or not; and it might have destroyed the Fruit: but being thus brought on under the Eye, it only serves to mellow the Juices and improve the Flavour: by the same Means the watery Part which would have rotted them, goes off in a gentle sweating.

Let the Blanket be lifted up from Time to

Time, and the Manner of the Sweats coming on, and its Increase observed: it will grow more for several Days, the Time being uncertain according to the Kinds of Pears; and after it is at the Height it will by Degrees decrease. As soon as this Decrease begins the Business is finished, it is not to be encouraged any longer.

The Blanket is to be taken off, and the Pears one by one wiped.

Clean and dry Linnen Cloths must be used for this Purpose, and great Care taken not to bruise them in doing it. Let the Gardener lay by a Number of the very finest for a peculiar Manner of Preservation; and when the rest are placed on the Shelves and Floor, dry, and at due Distance from one another, let these be managed in the following Manner.

Let a Dozen of large earthen Jars be wiped perfectly dry and clean on the Inside, and a Parcel of large light Moss be gathered in the Middle of a bright Day, and perfectly dried: let some common Sand be also spread before a Fire, dried, sifted, and left to cool. All this being ready, the Pears are to be thus laid into the Jars.

First cover the Bottom of a Jar with some of the dry Moss: then lay upon this as many of the Pears as will lie singly, not one upon another: on these lay another Bed of Moss, and upon that more Pears. Thus proceed till the Jar is full; and in the same Manner fill up all the others.

When they are all full, stop them up with Plugs, and pour over these melted Rosin.

Then set them upon a Bed of the dry Sand four Inches thick, and pour on more of it till they are filled up between, and covered a Foot thick.

Thus let them stand till the Pears preserved in the common Way are gone; and then being opened one by one as they are wanted, the Fruit will be found in them in perfect good Condition.

The common Method, which answers very well for those to be used earlier in the Winter, is to lay them separate and clear of one another upon the Floor and Shelves of an airy Room. The best Situation for the Room is to have its Windows to the South; and it should not be near any Place where there is a Fire.

In fine mild Weather the Windows must be opened in the Middle of the Day; but in bad Seasons they must be kept shut entirely: and in very frosty Times the Fruit must be covered with some dry Straw, which must be taken off again when it is milder.

In this Manner, after the sweating and wiping, the greater Part of the Pears for Winter Use may be preserved through a very considerable Part, if not the whole Season: and when they last no longer the Jars are a sure Supply to the End.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

CHAP. I.

Products now in Season.

THE several Products of this Part of the Ground, recounted in last Week's Catalogue, continue: there may be added to the List, the common purple and scarlet Radish; which, upon well-chosen Ground, will yet be found very good.

The Turnep-rooted Radish is also now in its

best Season, and very juicy.

Endive, of the finest Kinds, is in its Perfection; and there is, from Hot-Beds, small Salleting, equal to that of the Spring.

Mushrooms continue plentiful from the Beds; and the hardyer Soop and Pot-herbs flourish from the Moisture of the Ground.

CHAP. II.

The Care and Culture of the Kitchen-Ground.

SOME of the Cauliflower Plants, of which we have spoken in the preceding Week's Numbers, must now be planted out, and taken into due Care for the Winter.

This is the Method I have found answer best. Dig up a Piece of good Ground in a shelter'd Situation, and plant in the finest of the Cauliflower Plants, at such Distance as they may be conveniently preserv'd under Glasses.

Set only one Plant for each Glass; and when they are all in, and have had their first Watering, sift over the whole Ground a light Covering of Coal-ashes. This preserves it greatly from Frosts, which else beginning to crack the Earth on the Outside of the Glasses, the Flaws will continue under them, and hurt the Plants.

It is the Custom to plant two for every Glass; that if one fails, the other may succeed: there is an Appearance of Reason in the Practice; but it is only an Appearance. By what I have

seen, one of these often starves the other, and both come to little good.

These are to be cover'd all the bad Weather; and at the same Time some more of the Plants should be carefully set in warm shelter'd Borders, under Pales.

Those under the Glasses will come earlier than the others; and will succeed if these should fail.

Seedling Asparagus-Beds must now be protected from the Frost, and they will then furnish a fine Supply for a Spring Plantation.

The Stalks must be cut down, and the Beds covered with a Scattering of fresh Mould, and another of rotted Dung. If the succeeding Season prove very severe, there must be some dry Straw spread over them; and when it is milder, this must be taken off.

This done, let the Gardener go once again over his whole Ground, and wherever he sees a Growth of Weeds, destroy them: it is the last Time he need to perform that useful Office, for the Frosts will let no more rise.

E D E N:

A

COMPLEAT BODY of GARDENING.

N U M B E R IX.

For the Latter End of OCTOBER.

S E C T I O N I.

F L O R A, or the P L E A S U R E - G A R D E N.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. VIOLET Coloured AFRICAN CAMPANULA.

Octob.
P. IX.
Fig. 1.

THE Numbers of handsome Plants of the Campanula Kind we at this Time raise in our Gardens, need not shut their Door against an Addition of the same Kind.

This is a most elegant, as well as numerous Genus; and *Asia*, *Africa* and *America* offer us daily new Beauties from its various Species.

This we here propose has been known many Years in the neighbouring Kingdoms, and to some in *England*; but it is not so universal as it deserves.

The Colour of the Flowers, which is a deep velvety blue purple, has obtained it the *English* Name of Violet Campanula.

COMMELINE calls it *Campanula Africana annua hirsuta, latis serratisque foliis, flore magno violaceo*. LINNÆUS, *Campanula foliis lanceolatis dentatis bis pedis pedunculis longissimis capsulis strigosis*: Campanula with rough, indented, and spear-pointed Leaves, and with very long Foot-stalks to the Flowers, and slender Seed Vessels. A Name comprehending almost a Description.

It is an annual fibrous-rooted Plant. The Stalk is rounded, tolerably firm, purplish near the Ground, of a paler green upwards, and a little hairy.

The Leaves are of a very handsome Shape and Colour. They have no Foot-stalks; they are long, narrow, sharp-pointed, indented at the Edges, and of a lively green.

Numb. IX.

From their Bosoms rise numerous Branches, from the Bosoms of whose Leaves again rise others; so that the whole Plant is beautifully bushy.

All the lesser Branches terminate in long, slender, naked Twigs, which are as Foot-stalks to the Flowers; and some rise of an equal Length with the others, from the upper Leaves on the main Stalks.

At the Summit of each stands one Flower, very conspicuous in Size, Shape and Colour. It is so large, that the tender Foot-stalk usually bends with it; and it is, though of the proper bell-like Form, deeply divided into five Segments. Its Colour is that of the Violet.

This Flower is placed in a small hairy Cup, divided into five Parts, and situated upon the Rudiment of the Seed-Vessel, which afterwards becomes longish, and has three Holes at the Sides for letting out the Seeds, which are numerous and small.

In the Centre of the Flower is a conspicuous Part, formed of fine little convergent Scales.

This we have in general informed the Student is the Nectarium; but in this Flower it is very remarkable in its Office: for beside secreting the Honey Juice at the Base of the Flower, it is the Place of Origination of the Filaments.

These are five, and they are very minute :
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Octob.

one

Octob. one grows from the Point of each Scale of the Nectarium; and at the Tops of these stand Buttons of a Shape equally singular; they are very slender, and of a Length not less than that of the Filaments which support them.

The Style is single, and has its Top divided into five Parts, which turn backwards.

The young Botanist, who finds in this Flower five regular Filaments and a single Style, needs not to be informed farther to what Class it belongs in the LINNÆAN System.

The fifth contains the Pentandria, whose Character is this Number; and the single Style shews it to be of the first Section of that Class, the Monogynia.

This elegant Plant is a Native of the *East-Indies*, and of the *Cape of Good Hope*. The *Dutch* first received it thence; and they furnished the Rest of *Europe*. It there grows naturally in a loose, but rich Soil; and such we should allow it here.

It is an annual, and must be raised from Seeds. These it will ripen here, and the Plants will freely rise from them: but when there is an Opportunity of obtaining them from the native Place, they are much better.

The Soil for it should be composed of equal Parts of light Earth from a dry Pasture, and Mud from a Pond, with a very small Admixture of Sand; one Bushel of this to six of the others is sufficient.

This is a Soil extremely unlike the common Garden-Mould, in which most plant every Thing; and if the two be tried, the Difference will be seen in a strong Light. Indeed that is the only Method of Comparison.

Early in Spring let a Heap of this mixed Soil be prepared; and at the same Time a hot Bed raised for the Seeds, and covered well with good Garden-Mould.

In this let them be sown, and covered only a quarter of an Inch deep.

When the Plants have a little Strength, let them be removed into another hot Bed; and they must be there watered and shaded till they have taken Root.

In this they must stand till large enough to be

transplanted into Pots, which must be done with great Care.

For each Plant let there be a separate Pot of a middling Size. Let some Stones be laid in the Bottom to secure the Opening for letting out the Water from being clogged up; and then let it be half filled with the Compost.

Raise the Plant with as much of the Earth as can be kept about it. Set it upright in this Pot, and keep it steady by placing more of the Compost round it. Raise the Earth within an Inch to fill the Pot, and then give the Plant a gentle watering.

Set this Pot up to the Rim in a Bark Bed, and shade and water it at Times till rooted.

This is to be the Method with every Pot. When they are thus well rooted, the Air must be admitted to them by Degrees to harden them, by lifting up the Glasses of the Frame with a notched Stick: and after this has been done during the Heat of the Day for a Week, they must be set out in the Middle of a hot Day among the Green-house Plants. If the Night should threaten Cold they must be removed into the Green-house, and set out again the next Day.

They will thus be hardened thoroughly, and soon after they will bud for flowering.

In this they must be encouraged by slight Waterings twice a Day; and they will produce toward Autumn their first Flowers.

These when they fade must be carefully taken off; otherwise their Seeds will ripen, and no more Flowers, at best no good ones, be produced: but taking them off as they decay, there will be a Succession for more than two Months. If the Weather grow early cold, the Pots may be removed into the Green-house; or if there be Need into the Stove, where they will continue flowering till the Middle of *November*.

This is the true Method of managing this elegant Species. It may be kept alive with less Care; or it will not be destroyed by more Heat; but in neither Case will it flower as when it is thus ordered.

Few have seen how glorious a Plant it is, for want of knowing or attending to this Method of its Culture.

2. PURPLE SOCOTRINE ALOE.

Pl. IX. Fig. 2. The Number of the Aloes is very great, and many of them are of considerable Beauty. They are murdered in *England* by an unartful Culture; for very few apprehend what different Management is necessary for the various Species. We shall occasionally obviate this Mischief.

The Species we here propose to the Gardener's Care, is one of very considerable Beauty; and with a judicious Management it flowers with us abundantly, and with its full native Vigour.

It is commonly known by the Name of the Purple Socotrine Aloe.

COMMELINE's Name has given Rise to this; for he calls it, *Aloe Socotrina angustifolia spinosa flore purpureo*.

LINNÆUS calls it, *Aloe floribus pedunculatis cernuis subcylindricis*: Aloe with drooping subcylindric Flowers placed upon Foot-stalks.

The Root is thick and of an irregular Shape, covered with a brown Bark, and hung with many Fibres.

The

Octob.

The Leaves rise from it in a beautiful round Cluster: the central ones more upright, the others more and more obliquely.

They are very beautiful in Form and Colour. Their Length is a Foot and half. They are of a lively green, and they are narrow, thick, and fleshy: they are terminated by a thorny Point; and they have all along each Edge, a Row of pale and pointed, but not very firm Spines.

The Stalk rises in the Centre of these, and is round, thick, smooth, of a purplish brown, and two Foot in Height, decorated toward the Top with a few Leaves.

The Flowers attract the Eye, and they demand its full Attention. They are extremely numerous, cluster'd into a thick long Spike, and of a most elegant purple; not a deep dusky Tinct, but pale and lively.

The Leaves of this Plant being cut, drop out a yellow bitter Juice, not stinking, as the common Aloe, but sweet, and somewhat aromatic.

The Flower stands naked on its Footstalk, without any Cup, and is succeeded by an oblong Seed-vessel, form'd of three Valves; and containing, in so many Cells, numerous angulated Seeds.

Within each Flower stand six slender Filaments: these are of equal Length with the Body of the Flower; and upon them are plac'd little oblong Buttons, which shew themselves beyond its Verge.

The Style is single, and of the same Length with the Filaments.

We have so far inform'd the Student in the LINNÆAN System, that he need not be told particularly, this, which has a single Style among six regular Filaments, is one of the *Hexandria Monogynia* of that Author, his sixth Class and its first Section.

Culture of the purple SOCOTRINE ALOE.

The Beauty of this Plant, and its full Glory in flowering, depend entirely upon a proper Method of Management; and its Flowers are so great an Ornament to whatever Place they decorate, that it is very well worth all the Pains that can be bestow'd upon it.

The first Principle on which this Success in the flowering of it depends, is this: that tho' it will live in a less Degree of Heat, yet it always flowers more successfully in a greater. This has been prov'd in the *Dutch* Gardens, and must be a Lesson to all who raise it in ours.

The Propagation of it is easy. In its native State it throws off Abundance of healthy Suckers; and, with tolerable Care, will do the same here. These seldom fail to grow up into handsome Plants.

The best are those obtain'd from *Africa*, its native Soil, and they are very easily brought over; but it will rise to a great deal of Beauty, from those taken from Plants in our own Pots.

A great Article is the Soil in which they are to be planted, and there is nothing in which the common Practice errs so widely.

In *Africa* this Aloe covers the Sides of sandy Hills, and sometimes gets near the Sea.

Those who have examined the Soil in these

Places, have found it full of Sand, and of a loose white Earth like Mortar.

Their Descriptions, which they have given with more Truth than Art, have not been well understood; and our People, aiming to imitate the Appearance, when they could not make out the Reality, have, in general, mix'd up a Soil for it of Sand and Lime Rubbish mix'd with a dry light Earth.

To this is owing the indifferent Success of our Aloes of these Kinds. We are sorry to particularise Mr. MILLER as one who has advis'd this injudicious Practice; but it is needful to caution the Gardener against an Error, which under the Authority of that popular Name would else have stood for Truth.

Later Enquiries have discover'd, that the Substance which has been compar'd to Lime-Rubbish, in these *African* Hills, is MARLE. We have this in *England* in great Abundance, and the Farmers use it, tho' the Gardeners are not enough acquainted with it.

This is lodg'd in a brittle sandy Earth in these native Beds of Aloes; and this is the Soil we should imitate, and may fully equal.

Therefore, for the first Step in the Culture of this and other *African* Aloes, delighting in the same kind of Soil, let there be made a Mixture of five Bushels of light sandy Earth, from a barren upland Pasture; one Bushel and a half of Marle, and one Bushel of River-Mud. Let this be pil'd in a Heap together, and turn'd once a Fortnight; and when it has lain a Month, let there be sprinkled over this Quantity two Ounces of Sea-Salt.

This Compost will mellow into a light and crumbly Soil; tho', till touch'd, it holds firmly enough together. It will therefore cling sufficiently about the Roots of the Plants; and yet not load them or oppress their tenderest Fibres.

This being prepar'd in Spring, will be fit for Use about the Beginning of *August*, which I have found to be the most successful Time for propagating the Plants.

At this Season, fill as many small Pots with this Compost as you can obtain Suckers; first laying a Piece of Tile at the Bottom of the Pot, to keep open the Hole; for if that be stop'd, the Water given for the Support of the Plant, being detain'd, will be its certain Destruction.

The Pots being ready, take off the Suckers carefully from the Mother-Plants. Lay them in the open Air, but out of the Reach of the Sun or Wind, that they may harden a little; for otherwise they will rot at the Base, and come on poorly, whatever Care be taken of them.

When they have lain three Days in the Air, plant one in each Pot, taking Care that the Earth fall every Way close about the Bottoms. When they are all planted, set them under the Shelter of a Hedge, and shade them with Mats, but not so close as to deny them Air.

In this Place let them stand ten Days; and then remove them into a Bark-Bed, which has but a very gentle Heat. Set the Pots in this up to their Rim, and shade the Bed with Mats; but raise the Glasses to admit Air.

When

Octob. When they have, in this Bed, rooted pretty well, they must, by Degrees, be inur'd to more and more Air; and when they bear this without Hurt, it will be Time to take them from the Bed.

About two Months from the Time of, their first planting, they may be taken out of the Bed. But as the Season will be now advanced, and cold Nights come on, they must not be set out into the open Air; but taken from the Bark-Bed to the Green-house.

They must be there plac'd forwards, and have a great deal of Air by Day; but they must be defended, by shutting the Glasses, in an Evening.

All this Time they must have frequent gentle Watering, and let the Gardener take Care that the Passage at the Bottom of the Pot be free, and no Wet lodges in it.

In *October* they must be remov'd into the Stove, and from this Time they must have frequent Waterings; the Water having stood four and twenty Hours in the Stove, that it may be of the same Temperature with the Air.

With this Management they will grow very considerably during the Winter; and when the Spring comes on, they must be admitted to a more free Air by very slow Degrees, because the Winter's Growth has made them tender.

Toward the Middle of the Summer they must be again remov'd into the Green-house, out of the Stove, and gently water'd at Times.

In the very Heat of Summer it will do them good to set them out for a few Weeks among the Green-house Plants, expos'd at that Season; but they must not be expos'd to the least Danger of cold Nights.

This Care is to be repeated and continued according to the Seasons; and thus the Off-sets will be brought to flower about the third Year.

The Beginning of *August* will be afterwards the best Time of removing them from their old Earth, and giving new of the same Kind. This greatly strengthens their Growth, and promotes their flowering.

To this Purpose, they must be carefully taken

out of the Pot, and all the Earth wip'd from about the Roots.

Let the several Parts be then examined, to see whether any be decay'd, and if there be, let such be cut off. Then put some Pebbles into the Bottom of the Pots: fill to a proper Height with the Compost, and carefully put in the Plant.

Distribute its Roots regularly; pour in a little of the Soil very dry between them, and shake the Pot, that it may settle among the Roots. Then cover them with more, and fix them securely and steadily in the Pot. Put them again into the Green-house, and give them a gentle Watering.

This must be occasionally repeated; and under this Advantage of Shade and Shelter, Moisture and Warmth, they will presently accommodate themselves to their new Earth, and grow with Vigour.

This is the whole Care requir'd in nursing up these Aloes to a due Degree of Strength for flowering: but when the Time for that approaches, a particular Attention must be shewn to them.

They will flower as they stand in the Green-house; but the Flowers will not there have half their natural Beauty. More Heat is given by Nature, for this Purpose, in their own Country, and more must be allow'd them here.

Toward the Time of their natural flowering, the second or third Year, let the Gardener watch his Plants, and where he sees the Shoots for a Stalk, remove it into the Stove.

There let him give it Water often, and in little Quantities, and always warm'd, by standing in the Stove, to its proper Temperature. Thus the flowering Stalk will rise with all its natural Advantages, and will produce a Spike of more than fifty Flowers, opening in a gradual Succession.

After this the Plants will continue regularly flowering every Year, and producing a sufficient Number of Off-sets from the Sides, by which a new Succession may be rais'd, as we have directed.

The Care and Management of the grown-up Plants must be the same with that of the young ones, which we have already given; and no more is required to preserve them in their full Vigour.

3. ÆTHIOPIAN PHYLICA.

P. IX. This is a very elegant Shrub, so frequent at present in our Gardens, that we need not recommend it farther.

It is commonly known by the Name of *Alaternoides*, given to it by COMMELINE, from some Resemblance of the Flower to that of the *Alaternus*.

LINNÆUS, and the more correct Writers, call it *Phylica*, and distinguish it by the Addition of *Foliis linearibus verticillatis*: *Phylica*, with narrow Leaves growing in Clusters round the Stalk.

It is a Shrub of a Yard in Height, and of a very beautiful, bushy, and wild Growth.

The main Stem is covered with a brown Bark, and the young Twigs are purplish.

The Leaves are very numerous and small: they grow in a Kind of circular Clusters round the Stalks in many Parts, and they are narrow, sharp-pointed, and of a firm Substance. Their Colour on the upper Side is a fine strong green, and on the lower Side they are silvery or greyish.

The Flowers are very small and white, but their Manner of growing is singular and beautiful.

From the Tops of the Branches, and from their Sides, in various Places, rise slender Shoots of two or three Inches in Length, beset with numerous Leaves, and all crown'd with Clusters of these little Flowers. This Disposition of them, their

Octob. their natural Whiteness, and the Contrast of the strong Green of the Leaves, gives the Plant an Air of Prettyness, that the most incurious Eye is seldom seen to pass by unnotic'd.

The Flowers are all surrounded in the Cluster by numerous little Leaves, and each stands in its own separate Cup, which is compos'd of three narrow and sharp-pointed Segments: this remains when the Flower is fallen, and becomes the Defence of a roundish Seed-veffel, mark'd with three Ridges, and containing, in as many Cells, three roundish but irregular Seeds; one in each.

In the Centre of the Flower, which is tubular, and imperforated at the Base, and divided into five small Segments at the Rim, there rise five very small and slender Filaments; the Origin of these is singular: it is this.

At the Base of every Segment of the Flower there stands a little Scale; these are therefore five in all: they are sharp-pointed, and they converge inwards: the five Filaments have their Insertion under these five little Scales, one rising under each, and they are terminated by small roundish Buttons. The Style is plac'd among these, and is small and undivided.

This singular Structure of the Flower, plainly shews the Plant to be of a Genus distinct from all others; and the Filaments and Style shew evidently that it belongs to the *Pentandria* of LINNÆUS, his Fifth Class, and to the first Section, the *Monogynia*.

The Plant is a Native of *Æthiopia*, where it flowers all the Year. We first rais'd it from Seeds sent from thence; but at present, as it is common in our Green-houses, and the Cuttings of it grow very freely, it is rais'd only by that Method.

These afford very good Plants; but those who have seen such as were rais'd from Seeds, brought from wild ones in the natural Climate, know

how much they are preferable.

From these Seeds it is to be rais'd in Hot-Beds, as we have directed for the other Green-house Plants; but the other Way is the most universal.

Octob.

Culture of the PHILYCA.

The natural Soil for this Shrub, is a light Earth, with some Sand; and it is found to thrive best wild, when there be decay'd Wood about it, as near the Edges of Thickets.

We may easily copy Nature in this Matter, and the more strictly we do that, in this, as well as other Instances, the better we shall succeed.

Upon this Plan I form'd the following artificial Compost, with which I find the Shrub to agree so well, that it is not seen elsewhere so beautiful.

Mix a Barrow of Earth, from an upland Pasture, half a Barrow of good Garden-Mould, a Bushel of common Sand, and half a Bushel of Saw-Dust.

Let these be well work'd together in the Spring, and lie mellowing all Summer.

In the Beginning of the succeeding Autumn fill a Pot with this, large enough to hold eight or ten of the Cuttings. Let them be taken from a thriving Plant, and set in with Care.

Give them a gentle Watering as soon as they are in the Pot, and repeat it occasionally.

Set the Pots up to the Edge in an old Bark-Bed that retains a little Heat, and shade the Plants with Mats.

By this Means, the gentle Waterings, moderate Warmth, and due Degree of Shading, will encourage them presently to strike Root; and after this they require no particular Care, but must be treated just as the Green-house Plants. Their singular Aspect and late flowering, give them a great Value.

4. OCCIDENTAL GREWIA.

Pl. IX. This is a very elegant little Shrub, and from its handsome Growth, as well as the Singularity of its Flowers, deserves a Place in every Collection.

The old Writers on Botany were unacquainted with it; and those who afterwards came to the Knowledge of it, were perplexed where to arrange it, or by what Name to call it.

PLUKENET has call'd it, *Ulmifolia Arbor*: and COMMELINE, *Ulmifoliae Arbuscula*.

LINNÆUS has distinguish'd it by the Name *Grewia*; and as this Species has the Leaves of a Form approaching to oval, he has added, to make the specific Name, *Foliis subovatis*.

They judg'd by very faint Resemblances who nam'd this after the Elm: they should have sought the Characters not in the Leaf, but in the Flower.

It grows with us to a Shrub of five Foot high, and spreads in a pleasing Manner into Branches.

The Bark of the main Stem is greyish, and N° 9.

that of the young Shoots brown, and often purplish: they are very slender, and are arm'd with a few slight and almost harmless Thorns.

The Leaves are plac'd with perfect Irregularity, sometimes in Pairs, sometimes alternately, and they are an Inch and half long, and an Inch broad.

They have short Foot-stalks, and their Colour is a pale but pleasing green. Their Edges are serrated, and they are pointed at the Ends.

The Flowers are scattered over various Parts of the Shrub, and they are very conspicuous: they are large, open, and of a pale purple, with a great Cluster of yellow Buttons in the Centre.

This Flower is plac'd in a five-leav'd-Cup, of a firm tough Substance, and colour'd on the inner Side; and is succeeded by a Fruit of the Berry Kind, but square, and divided within into four Cells.

The Petals of the Flower are properly five; D d but

Octob. but they are so mix'd among the Leaves of the Cup, and those are so large and colour'd, that the Flower appears to consist of twice that Number.

At the Base of every Petal there is plac'd a little Scale; and these converging, surround, at the Bottom, the Style.

In the Centre of the Flower appears the Rudiment of the succeeding Fruit: from this grows up the Style; and upon it are inserted also the Filaments. This is a singular Disposition; and the Student must carefully regard it; because on this depends the classing of the Shrub.

These Filaments are very numerous, and of the Length of the Petals, and they are crown'd with roundish Buttons.

The Rudiment of the Fruit, just described, terminates a Columnar Receptacle, and from it rises the Style, which is single, and of the Length of the Filaments.

The Sight of these Filaments might at first perplex the Student; but he will remember, that when they are thus numerous, the Class of the Plant is not to be found by counting them; but by observing the Place of their Origination.

If they be inserted in the Inside of the Cup, the Plant belongs to the *Icosandria*: if on the Receptacle, it is of the *Polyandrous* Class; but he will find in this they are not inserted on either, but rise from the Base of the Germen or Rudiment of the Fruit, which terminates the Receptacle.

This is the Female Part of the Flower; and he will recollect, that we have before acquainted him of the *Gynandria*, the Twentieth of the LINNEAN Classes, whose Character is, that the Filaments grow on the Female Part.

The *Grewia* is one of these; and there is no Plant which better shews that Character.

Culture of the GREWIA.

Octob.

This Shrub is a Native of the *East* and *West-Indies*, and of some Parts of *Africa*; always in extremely hot Climates.

It loves a mellow Soil, and this we must give it here. The best is made of equal Parts of Garden-Mould and River-Mud, with a small Sprinkling of coarse Sand; in this let it be planted with due Care, and it will not fail to flower under a right Degree of Warmth and Moisture.

The best Method of raising it is from Seeds; but it is much more easily propagated by laying the Branches.

If it be rais'd from Seeds, they must be sown in Spring, on a moderate Hot-Bed; and at the same Time, the Soil, we have directed, must be prepar'd for their future Reception.

The Plants, when come up, must have a little Water carefully given them; and being rais'd to some Strength, they must be transplanted into Pots of this prepar'd Soil.

These must be set up to the Rim in a Bark-Bed of moderate Heat, and shaded till they are well rooted.

From this Bed, when they have gain'd some Height, they must be remov'd into another, first planting them into larger Pots; and when they have been shaded in this, and water'd till they have taken good Root, they must be by Degrees inur'd to the Air.

In the Height of Summer they may be expos'd among the Green-house Plants; but before the least Approach of Cold, they must be hous'd, first taking them into the Green-house, and then into the Stove.

The Way of laying the Branches has nothing in it particular, but they must be laid into Pots of this Compost; and when they have taken sufficient Root, treated in all Respects as the others.

The Shrub will bear the open Air, with the Green-house, a great Part of the Year; but it will never flower so well as in the Stove.

5. VINE-LEAV'D GERANIUM.

Pl. IX.
Fig. 5.

We add here to the *Geraniums*, we have before recommended to the Gardener's Attention, one whose Beauty and Fragrance have already engag'd the general Attention; and which is worthy a Place in the best Collections.

Authors have nam'd it under the Title of *Geranium tuberosum vitis folio, noctu oleus*. LINNÆUS, more distinctly, *Geranium calycibus monophyllis tubis longissimis subsessilibus radice subrotunda*: Roundish-rooted *Geranium*, with Cups form'd of a single Leaf, and very long Tubes on short Footstalks.

It is a very specious Kind, and scarce inferior to any in Elegance.

The Root is roundish, brown, and full of Fibres.

The first Leaves rise in Numbers, and are supported on long thick hairy Foot-stalks: these are sometimes purplish, but naturally green; and the Leaves are also of a fine bright green. They are large, broad, divided deeply in several Places, and not unlike some Kinds of Vine-leaves: and they are highly rib'd, and lightly hairy.

Frequently at the Bases of these there stand one or two little Appendages, but this is not constant.

In the Centre of this Tuft of Leaves rises the Stalk, which supports the Flowers. This is round, thick, hairy, purplish at the Bottom; and on the upper Part green.

The Flowers spread out in very glorious Tufts, and they are in themselves large and beautiful.

1

Their

Octob. Their Colour, in the Middle Part of the Petals, is a delicate red, but the Edges of them are naturally of a pale yellow.

These Flowers are plac'd on hairy Footstalks, singly sometimes, but oftener in Clusters; and they are succeeded by long Beaks, in the Manner of the other Plants of this singular Kind.

The Flower of the *Geranium* we have explain'd to the Student, in treating of some of the preceding Species; and as this differs in nothing essential from those in the general Structure, we shall barely recapitulate, that the Petals in the Flower are five; and that the Filaments, which are ten in Number, grow together, so as to form one Body at the Base: wherefore the Plant is not to be class'd according to their Number, but to this singular Disposition; and thence plac'd in the *Monadelphous* Tribe; and in the second Section containing the *Decandria*, those whose Filaments are ten.

Culture of the VINE-LEAV'D GERANIUM.

The Plant is a Native of *Africa*, where, after Sun-set, its Flower has a very singular Fragrance, tho' none in the Heat of the Day: this is not wonderful, for the great Heat dissipates the Vapour, on which their Smell depends. With us it has the same Quality, but in a less Degree.

It naturally delights in a rich, mellow, and light Soil; and the preparing such a one for it here, should be the first Care of all who wish to see it in its natural Lustre, or enjoy its Evening Fragrance.

To this Purpose, let there be mix'd together two Barrows of Mould, from a fertile but dry Pasture; one Barrow of Earth from under an old Wood-Pile, and half a Barrow of large coarse Sand.

Let this be pil'd in a Heap several Months before it is wanted, and kept clear from Weeds by frequent Turning.

Let Seeds be obtain'd, when that can be done, from *Africa*; but, in other Cases, let the best of those it ripens here, be carefully preserved during Winter, and sown in Spring.

They should be scatter'd upon a well-cover'd Hot-Bed, and bury'd half an Inch.

The Plants will soon come up; and when they have acquir'd a little Strength, they must be remov'd into another, and set at greater Distances.

In this they must be shaded and water'd, to promote their Rooting; and when they are somewhat more advanced in Bigness, remov'd into Pots.

Common Mould serves very well the Purpose of covering the two Hot-Beds; but the Compost prepar'd for them must be now put into the Pots.

First let some Pebbles be laid in the Bottom of the Pot; then let it be half, or more, fill'd with the Compost; and being thus prepar'd, let the Plants be one by one taken up, with as much of the Mould as will hang to the Roots, and set upright in the Pots. Let more of the Compost be pour'd in, to fill them up to a proper Height, and the Plants secur'd upright. Then let them have a gentle Watering, and be plac'd either in a Bark-Bed that has but little Heat, or under a common Hot-Bed Frame to help their Rooting.

Here they must be cover'd, shaded, and water'd, till well rooted again; and after that the Glasses must by Degrees be rais'd more and more, in the Heat of the Day, to harden them; and they must afterwards be set out among the Green-house Plants.

They will flower, with good Management, the first Year. They must be taken in at the Approach of Winter, and they will every Year afterwards flower stronger and stronger; and will, in Time, produce Off-sets from their Roots, which being nurs'd up with the same Care as the Seedling Plants, will sooner come to the full Glory of their flowering. They will always flower the best, when they have most free Air.

6. PURPLE SHRUB TREFOIL.

Pl. IX. We raise many of the Shrub Trefoil Kind with as much Care as would be requir'd for this, which have not half its Beauty.

Fig. 6. It is greatly esteem'd in the other *European* Collections, and deserves to be made universal in our own.

The *papilionaceous* Flowers, added to the Disposition of the Leaves, express the Character of its Genus so plainly, that all who have treated of it, have call'd it by its proper Name.

COMMELINE calls it, *Trifolium Africanum fruticosum flore purpurascens*. LINNÆUS, *Trifolium spicis subvillosis, lacinia calycum infima maxima, caule fruticoso foliis subsessilibus*: Shrubby Trefoil, with Leaves having scarce any Foot-stalks; with hairy Tufts of Flowers; and with the lower Segment of the Cup large.

Those who are not acquainted with Botanical

Knowledge, censure LINNÆUS for the Length and Abstruseness of his Names. With Respect to the latter Charge, it is his Care to avoid making them yet longer, which occasions it; and the Length they have is proportioned to the Number of Species, from the which they are to distinguish that to which they are apply'd.

Thus, in this Instance, the Species of Trefoil are extremely numerous; and the Author was therefore under a Necessity to point out the peculiar Parts in which this differs from the others. A shorter Name could not have answer'd the Purpose of a just Distinction of the Species.

It is a shrubby Plant, of irregular Growth, and of about two Foot in Height.

The Root is woody, divided, and full of Fibres.

The Stem is firm, round, hard, and cover'd with a brown

Octob. a brown Bark; and the young Shoots are usually brown, and sometimes reddish.

The Leaves are narrow and oblong, pointed at the Ends, not at all serrated at the Edges, and of a lively green. They stand in Three's, according to the Character of the Genus, and they are a little hairy.

The Tops of all the Branches are crown'd with numerous Flowers. These are large, for a Plant of this Kind, and very eminent in their Colour; which, when the Plant is healthy, is a Purple no Paint can represent.

They are arrang'd in a kind of thick short Spikes, and these are downy, in the Manner of the Leaves; but that the Hairs are paler colour'd and longer.

Each Flower stands in a Cup, form'd of a single Piece, but divided deeply into five Segments, of which the lower one is over-proportioned to the rest in Size; and is succeeded by a short Pod, containing a single angulated Seed.

The Flower itself consists in the Manner of those call'd *papilionaceous*, of four Petals. Of these the upper one, call'd in these Flowers the *Vexillum*, is somewhat broad, and turn'd naturally back: the two side ones are call'd *Alæ*, or Wings, and these are shorter than the *Vexillum*; and the lower Petal, or *Carina*, is shorter yet than they.

The Filaments are hid; but on tearing open a Flower carefully, they are distinguish'd plainly: they are ten in Number; as is seen by counting the Antheræ; but they are form'd into two Assortments; nine of them uniting into a kind of Tube, and the tenth, which remains single, falling over its Opening.

The Style rises within this tubular Body, and is defended by it; and it is single.

The Student, upon this Examination, will not fail to recollect what we have laid before him, relating to the *Diadelphia*.

The Characters of these is, that the Filaments are form'd into two Assortments; and the third Subdivision contains those Plants of this Description, which have the Number of ten of these Filaments: plainly therefore this Species belongs to the *Diadelphia Decandria* of LINNÆUS, as do indeed all the others of that numerous Family, the Trefoil.

Culture of the PURPLE SHRUB TREFOIL.

The Plant is a Native of *Africa*, and there lives in a very dry and barren Soil. This we must imitate in *Europe*, or we shall never see it in its full Beauty.

Too rich a Soil will make the Branches spread in greater Number, and the Leaves will thus be larger; but it will have fewer, and those paler Flowers.

Nothing but a Soil, that in some Degree resem-

bles its own, will give that lively Tinge to them they have where native. Octob.

For this Purpose, let the Gardener mix together two Barrows of Earth, taken from a hilly and poor Pasture, and half a Barrow of Sand. Let him break over this, a quarter of a Pound of Stone Lime, and leave it to the Air, turning it once a Fortnight.

This being prepar'd, let the Seeds be sown upon a moderate Hot-Bed. They will rise freely. Those from its native Country are best; but it will ripen them so well here, that they will afford very good Plants.

When these are three Inches high, let the best of them be remov'd to another Hot-Bed, and shaded well, and water'd gently, till they are rooted: then let them be encourag'd to grow up by more Water; and when they are grown to a good Size, let them be planted out into Pots.

Into each Pot let there be first put some Pebbles, to facilitate the Passage of the Water: then let them be fill'd half up with the Compost prepar'd for them; and on this let the Plants be set with a little of the Hot-Bed Mould about their Roots.

Then fill up the Pot carefully with more of the Compost; and take Care the Plants stand upright. They must have a gentle Watering after this, and be then set under a Hot-Bed Frame, and shaded, and occasionally water'd.

When they are well rooted, the Mats, or whatever else were us'd to shade them, may be taken off, and the next Care is to harden them to the Air. This is to be affected by raising the Glasses in the Middle of the Day; and after a Week's Management of this Kind, they may be set out, in the Middle of a hot Day, in a warm and well-shelter'd Place.

After this they must be water'd once in two Days, but not much at a Time; and when the Weather grows cool, they must be remov'd into Shelter.

They will flower the first Year, and continue a long Time in their Lustre; and from that Time they will be every Year stronger, and will produce more numerous Flowers.

Unless the Seeds are wanted, it is best never to let them ripen upon the Plant; but let the Gardener, as the Flowers fade, nip off the Heads. this will prevent the Root from being exhausted, tho' it make the Plant yield more numerous Flowers.

This is a general Truth, the Gardener should always know, That there is more Harm done to a Root, by ripening one Head of Seeds, than by the blowing of many Flowers; for that is the last Work of Nature.



Ethiopian Philyrea

*Violet colour'd African, Purple Sootrine (Uoe.)
Campanula*



Occidental Grenia

Vine-leaved Geranium

Purple Shrub Trefoil

C H A P. II.

The Management of the Flower-Garden.

THE Care the Gardener has already taken of his perennial Plants, naturally directs his Eyes to the Roses and Honey-suckles, and those other flowering Shrubs, which are frequent among Flowers, and mix well with them in the Borders.

This is a Time to give these the requisite pruning.

Nature is luxuriant where the Soil is good; and as her Intent is to encrease the greater Part of these by Suckers; they never fail to be thrown out in Abundance, according to the Health and Age of the Plant.

These the Gardener is to retrench, for he does not want them there; and they serve two very bad Purposes; they deform the Plants, and hurt their flowering. To have the Rose in its full Lustre, as much as possible of the Efforts of the Root should be directed to the Supply of the Flower; but in this Case the Suckers intercept the greatest Part of the Nourishment, and the more valuable Production of the Shrub is starved. These Suckers must therefore be all taken off, and the Branches pruned.

The Suckers may be planted out by such as want a Supply of these Shrubs; for it is a very good Way of raising them: though that may be done also by Layers, and by binding; as we shall shew when we treat of the several Particulars.

The pruning of the Rose Bush depends upon two Articles: cutting out the dead Wood, which is always to be done at this Season; and taking off too luxuriant Shoots, which may be done at Discretion, and never succeeds so well as at this Season.

There will often rise some peculiar Shoot, which the Root supplies at the Expence of all the rest of the Plant; and this should be prevented, either by cutting such Shoot entirely away, or shortening it, that it may send out new Shoots where they are wanted.

Thus far the Art of pruning the Rose Tree is known to the common Gardener; but no farther.

We propose to lead our Pupils to more Knowledge.

The first Principle is this: a smaller Number of very fine Flowers is preferable to a larger Number of indifferent ones.

It is therefore his Interest to reduce the Number, not when the Shrub is about flowering: but by retrenching the Branches at this Time.

The Luxuriance of Wood starves Flowers, as well as Fruit; and Branches choak, that interfere with one another.

All these Reasons conspire to what we are about to direct; which is the clearing the Rose Bush of many of those Branches at this Time, which the common pruning would leave on.

The Rule is this: first let all long Stragglers be shortened; for they deform the Shrub while they exhaust the Nourishment.

These being taken off, and the dead Wood cut out, and large Shoots taken away or shortened, the Shrub will shew itself in its right Form.

Let the Gardener now use his Knife more freely. Wherever one Branch stands before, behind, or close against another, let it be taken off.

When three stand too near, let him cut out the Middle one: and in the same Manner proceed through the whole Shrub; leaving the Boughs at moderate and equal Distances; and taking Care, that as he leaves no Cluster, so he make no Gaps.

This indeed is partly a Consequence of the other; for the thick Growth of the Boughs in one Place makes the Gaps more visible in another.

The Shrub thus cleared, he will be able to see through between all the Branches; and where the Eye can pass, there can also the Air.

This done, and the Suckers first removed, let the Earth be dug about the Shrub and well broke, and let some good fresh Mould be scattered over the Bottom half an Inch thick. Thus let him go on with every Rose Tree in the Garden; and the Consequence will be, that next Year they will be vigorous in their Shoots; their Leaves well coloured, no Blight or Mildew will be seen upon them, and they will be handsomely covered with Flowers of the finest Kind according to their several Species.

Nothing is more common or more disagreeable than Blights and Mildews upon Rose Trees. These in all Cases rise from choaked up Air, or Want of Nourishment; and by this Practice there will be a free Passage for all Vapours, and a good Supply for the Roots.

The PRUNING OF HONEY SUCKLES is a much easier Task; they are more apt to be luxuriant in straggling Shoots, than in the middle Branches; and these long trailing Boughs are what must now be retrenched.

The Gardener must take a sharp Knife and cut them off behind a Leaf Bud. Any other irregular Branch is to be reduced in the same Manner, and the Shrubs will thus be brought to Order, and prepared for making a handsome Appearance the next Year.

The Ground should be also broken round about them by good digging, and a little fresh Mould scattered in over the Surface.

In the same Manner are to be treated the other flowering Shrubs which stand our Winters in the open Borders.

The Care of the Seedlings in Boxes is now to defend them from the cold Winds, and give them all the Advantage that can be of the Sun. This, and clearing them of Weeds, is all they require.

The Business of the SEMINARY, for the present Week.

THIS Week it will be proper to put into the Ground the Stones of several Kinds of Plums for raising Stocks for the future Use of grafting. There is no Difficulty in this; but if due Care be not used they often miscarry.

Let the Earth be opened for them a Spade's Depth: then when it has been well broken let the Surface be laid level. Upon this spread the Stones evenly, and at a moderate Distance; and cover them an Inch and a half with Mould.

Then spread some Mulch over the Surface, and set two or three Traps for Mice. In this Manner they will have Time to prepare for shooting; and they will be secured from the Severity of the Weather.

By this Method a great many of them will shoot, and there will be the Foundation of a good Supply for the succeeding Seasons.

Every Year this Practice should be repeated; for there is little Trouble in it; and it must be very agreeable to a good Gardener always to have a due Supply of them.

This is a very good Time also for raising Beech from Seed. It is a Tree that may be introduced with Advantage on several Occasions in Gardening, and planted in waste Ground, to the great Benefit of the Owner.

It will grow on the barrenest and most rocky Soils; and the Timber is of constant Sale to the Upholsterers and Turners.

In large Gardens it makes a very good Hedge, and from its tall Growth is fitter than most other Kinds for high Plantations.

These are Reasons for raising Beech in the Nursery; and as a small Spot will serve for a great Number of Trees, let not this Opportunity be neglected.

Now is the Time for sowing it. Let the Mast or Fruit be got from a large and healthy Tree; and after spreading a few Days to harden it, let it be sown upon a level Bed of well dug Earth, and covered an Inch with fine light Mould. Let some Furze Bushes be thrown over the Bed, and several Traps set for Mice. Thus defended it will sprout vigorously; and Year after Year, for three Seasons, a Part of the young Trees may be drawn and planted out in other Places, the rest standing more free.

If there were Layers of any Kind made the former Year, this will be the proper Time of taking them off from the Mother Plants. They will be now rooted; and being planted out will get some Root before the Frosts; and be strong for the succeeding Season.

These are to be treated in all Respects as new planted Trees; and defended from Injuries as we have directed in the preceding Numbers.

These being removed, let others be layed, that they may be ready for the same Operation the succeeding Autumn. One Year roots most of them perfectly: there are others that require two: and this we shall particularly direct under their several Heads.

Plant the last Cuttings of the Autumn this Week; and that done, leave the Seminary for the present.

S E C T I O N III.

P O M O N A, or the F R U I T - G A R D E N.

C H A P I.

Fruits now in Season.

THE Catalogue under this Article will be now every Week more and more reduced, till it come to almost nothing. Every Day some Kind that had continued so long is lost; and none offer for a new Supply: therefore we must expect few Names of them.

There yet remain some Grapes, and with good Care they will continue longer.

The *Portugal* Grape, distinguished by this Name because frequently imported from that Country in the Bunch, will with due Care now begin to ripen in our Gardens. It is a very rich and noble Grape; the Bunches are large, but the Berries hang irregularly and in a scattered Manner; they are very large, and of a reddish Purple, covered with a fine blue Powder: the

Flesh is firm, and of an extremely fine Flavour.

Some Seasons this Grape will ripen in the common Way; but in almost any it will succeed with a hot Wall, and the Taste will be at least equal to what we receive from Abroad under the Disadvantages of Carriage.

The *White Morillion* is another Grape of this Season; and tho' it has Disadvantages, yet is not without its Excellence. The Skin is hard and disagreeable, but the Juice is very rich. It is a round white Grape in thick Bunches.

The *black Raisin Grape* is also now in its Perfection, if managed with due Care: else it does not well ripen. This is a large Grape in great Bunches: the Berries are oblong and black, and they are well tasted.

Octob. The Medlar and the Service, mentioned in the last Catalogue of these late Fruits, continue yet in Season, and if well kept improve in Goodness: and from these, with the Assistance of the Nut

Kind, and now and then a Pine-Apple, the Desert of a handsome Table may be yet furnished in a tolerable Manner. Octob.

C H A P. II.

The Care and Management of the Fruit-Garden, and Orchard, for this Week.

A GREAT deal of pruning may be done at this Time: and let the Gardener see that it be executed in a careful Manner.

Let him look to his Peach-Trees. The Time for pruning of these most successfully, is a little after they have done shooting. This has now been over some Time, and the Season is therefore come for the Work. Every Gardener knows that in pruning he is to shorten the Branches; but this in general is the Sum of their Knowledge.

They must be informed, that no two Trees require the same Degree of shortening: and that in order to know what is proper, they must examine the State of the Tree. The general Rule is, that if it be strong, they may be left seven Inches; and if they be weak, they must be cut to four.

These are the Rules by which the Gardener is expected to conduct himself; and having no others, it is not a Wonder his Business is no better managed.

There are various Degrees of Weakness in a Tree; and to every one a peculiar Manner of pruning should be applied. Reason must go a great Way in this; but she will wander, if not better guided than by such vague Lessons.

We will suppose the Gardener is set to prune a Peach Tree, which is weak from ill Management; as this is the Case too generally. He finds it full of short small Branches: many of these have their Ends dead; and the rest are covered with weak Buds, which are neither fit to produce good Fruit, or good Shoots.

What is he to do in this Case? 'tis needful to enquire, because it is a very common one; and at this very Time, half the Trees in our Reader's Possession are in this Condition. They are interested therefore to look into it; for the succeeding Years Fruit depend upon this pruning.

The Gardeners, as if taught by one universal Master, follow the same Practice. They say they must recover the Tree; and to this Purpose they cut the Branches short, and leave on the greater Part of them.

The Error of this Practice appears the next Year; but they are blind to it: they repeat it the Year after; and thus the Tree grows from bad to worse, till the Gardener, whose ill Management has destroyed it, declares it old and unfit for Service; and it must be replaced by a new one.

The natural Consequence of their Manner of pruning is this: the shortening of these Branches produces new ones in Abundance from them; so

that the Tree is loaded, and they grow starv'd and weak by being so near one another. Distance is the great Article in the strengthening the Shoots: when they stand remote, they have the better Share of Nourishment, and the Air passes freely between them, which is very essential.

Let the Gardener, who shall follow our practical Directions, look to the Bottom of the Tree, and see what Branches have been made there the last Year.

If there be any of these tolerably strong, let the Buds be taken off, and let them be nail'd to the Wall, in the Manner of the Stems of new-planted Trees.

This is the first rational Step toward a Recovery of such a Tree.

All those must then be cut off, that would interfere with the Disposition of the principal of these, in a proper and free Manner, upon the Wall.

After this, let these strong Branches be train'd in all Respects as new Trees should be.

There are Instances of such unfavourable Growths, that a Gardener shall not find any of these Branches in the proper Places; or fit for his Purpose: then let him select a Couple of the best and stoutest of the old Branches, one on each Side; and begin the Recovery of the Tree by these, cutting off all the small Branches from them; except about five on each; which must be chosen for being the strongest or the best plac'd.

These Branches are to be nail'd up like Stems; and the same Care taken of them as if they were new-planted Trees, to make them spread in Order.

After this, every Year the old Branches must, one by one, be taken off, to make Room for the new ones.

This is a plain, an easy, and a rational Method of recovering a weak Peach-Tree; and it is certain of Success.

The lower Part being thus manag'd, let the Gardener look to the upper Branches. He will, in such a Tree, find many of them dead at the Tops: these must be taken off; and when he has done that, let him select the most promising there are for bearing; and, clearing them to half a Foot Distance, nail them upright to the Wall.

Where an old Peach-Tree is full of strong Wood; and has very little prepar'd for Fruiting, the following is to be the Gardener's Method of pruning:

Let him examine the Condition, State, and Origin of these Faults, and he will find the Mischief has arisen from short cutting and improper nail-ing of Branches.

This

Octob. This is the common Case; and in general, it is equally true, that the Gardeners have been the Cause of the Misfortunes they lament. Let our Pupil, in this Case, examine the Bottom, and nail up two strong Branches for Stems: then let him cut all the others out of their Way. The strong Branches above must then be laid horizontally; and at such Distances, that the Bearers, proceeding from them, may be nail'd upright, without crossing the Horizontals above them.

If any of these Branches project over the lower Parts of the Tree, they must be cut off close to the Part from whence they proceed.

Thus may the worst Peach-Tree, that has but

Octob. Vigour at the Root, be recover'd and brought in- to Form as easily as a new-planted one; and all the Time continue bearing.

This is the most difficult and nice Part of Pruning; and there is nothing in which the practical Gardener more needs Assistance.

In all this, it is essential that the Middle of the Tree be kept thin of Branches, for they may be easily supply'd when the Sides are taken Care of; and if the wrong Growth be permitted there, they will presently run the Trees into the decay'd State again, from which we have just propos'd to recover them.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

THE Products in our last continue, and this is not a Season for sudden Additions; we shall therefore avoid useless Repetitions, and enter at once upon what remains to be done in the Ground.

Celeri will be, during the succeeding Season, a very useful and valuable Product; and the Time of taking Care of it, for that Purpose, is now. It is a Point not sufficiently regarded, and is capable of Improvement; which, as we have Experience for our Voucher, we shall direct freely.

We suppose the Celeri, which is at this Time to be earthed, to have been planted in the usual Way in Trenches, at a Yard Distance, and the Earth of the Trench by this Time all drawn up about them.

This is the natural Condition of a tolerably manag'd Celeri-Bed, in the End of *October*. The Plants are considerably advanc'd in Height since their last Earthing; and there will be double Reason of repeating it now, because they will want it for bleaching, and for defending them from the Frost.

For this Purpose, the Earth thrown up out of the Trench, having been already us'd, the Spaces between the Rows are to be dug up, and their Soil us'd for the Purpose: but this is sometimes so sad and damp, that it either rots the Plants, from its Wet, or gives the Frost too much Power, to destroy them: the Effect of Frost being always greatest where the Ground is most damp.

To prevent these Accidents, and at once secure and encourage the Crop, let there be spread over the Ground, that is to be dug, half an Inch Thickness of clean River-Sand: over this sprinkle a little Brine, made of common Salt in Pond-water. Let this lie three Days, and then begin digging. Mix in the Sand as you dig, and break the Earth very carefully. Let it lie thus two Days more to dry, after the breaking, and then draw it up about the Plants.

The Effect of this Mixture I have always found to be this: it dries and mellows the Soil, and at the same Time enriches it; for it gets more by the Salt than it loses by the Sand.

It falls closer about the Plants, which is a very material Article; and at the same Time that it perfectly serves for the Purpose of blanching them, it neither detains the Wet to rot them, nor admits the Frost to destroy them.

This, I have prov'd upon repeated Experience; and I have always found that the Ground, at the Year's End, instead of being damag'd or impoverish'd by this Admixture of Sand, has been improv'd by it for succeeding Crops.

This Care having been taken of the Celeri, at present, a little long Straw or Pea-stalks may be thrown over it, in very severe Frosts; and it will, so, be perfectly preserv'd thro' the Winter.

Young Salleting will be very acceptable now, and it may be rais'd upon Hot-Beds; or any where under Shelter.

The Kitchen Gardeners, who supply our Markets, have the Art of making the most of their Ground on every Occasion; and they have a very good Method in this Respect, which is sowing this Salleting under the Glasses that cover the Cauliflower Plants.

We have directed the Gardener in the Management of these, and shall advise him, by all Means, to use this Expedient. Let him sow the Seeds in Drills, just within the Edge of the Glasses; and take Care to gather it young. In this Case, it roots so slightly, that it draws nothing from the Cauliflower Plants.

A few purple and scarlet Radishes should be sown now in Places well shelter'd, and they will yield their Produce at a very acceptable Time.

It may also be proper to commit to the Ground, at the End of this Week, another small Crop of Beans and Pease. One of these Crops failing, another sow'd at so small a Distance of Time, very naturally and very well supplies its Place.

When these Crops are in, and this Care taken of the Ground, the great Affair of the Autumnal Management of the Kitchen-Garden is over; but there will be some Employment there all Winter.

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R X.

For the First Week in *NOVEMBER*.

S E C T I O N I.

FLORA, or the P L E A S U R E - G A R D E N.

C H A P. I.

Flowers and Curious Plants now in their Beauty.

I. W H I T E S H R U B A S T E R.

Nov.
Pl. X.
Fig. 1.

THE ASTERS decorate our Gardens in great Numbers : but this is a Species less universal than it deserves to be; exceeding most of them in Beauty.

The *White Shrub Aster* is its *English Name*; and tho' the Colour of the Flower is not to be limited by that Term, 'tis not altogether improper.

The Plant is a Native of *Africa* and *America*; and in the latter Country it produces white Flowers, tho' in the other, they are stain'd with a lively Purple.

The first Plants of it rais'd in *England*, were from *American* Seeds, and they retain'd the original Character; the Flowers being white: but, from the more burning and more barren *African* Soil, it glows with a very lively Colour.

PLUKENET, acquainted only with the *American* Kind, has call'd it *Aster Maritimus fruticosus Hypophyllis confertis flore albo*.

LINNÆUS distinguishes it from the rest of that numerous Tribe, by the Name, *Aster foliis linearibus fasciculatis punctatis, pedunculis unifloris nudis, caule fruticoso rugoso*: Rough shrubby-stalk'd Aster, with narrow, cluster'd, and punctated Leaves, and with single Flowers on naked Foot-stalks.

We recommend to the Gardener to get his Seeds
Numb. X.

from *Africa*, or to raise the Shrub from Seeds or Cuttings, obtain'd from Plants in our own Gardens, that have been of *African* Origin; for the Difference is vast in their Beauty.

It is a low, tho' shrubby Plant.

In its native Climate it does not rise to more than three Foot; and, with good Management, we may bring it to the same Size here.

The Root is woody, brown, and terminated by white Fibres.

The Stem is covered with a rough grey Bark, and it spreads out into numerous scattered Branches, whose Twigs are purplish.

The Leaves are narrow, numerous, and of a fresh green: eight or more of them usually rise at the same Joint; and of among these the Foot-stalk of a Flower. This is naked, and an Inch and half long.

On its Top stands a single, large, and very beautiful Flower, white in the *American*, with a pale straw-colour'd Disk; but in the glowing *African* Kind, the Rays are purple, and the central Part of a gold yellow. This it keeps, so far as I have seen, always in the Seedling Plants, as well as those rais'd from Cuttings.

The Flowers, at Evening, have a faint Sweetness; and the whole Plant a warm and aromatic Flavour.

F f

The

Nov.

Nov. The Flower, examined strictly, is found to be compos'd of numerous slender Rays, and a Cluster of Floscules in their Centre. It is plac'd in a scaly Cup, fram'd of numerous Parts; and the Seeds which follow, are retain'd only in this Cup without a Capsule; and are wing'd with Down.

We have explain'd to the Student already the general Nature of radiated Flowers. The Petals or Rays he is to regard in this no farther than in other similar Cases; they are an ornamental and defensive Part; but they have no Office in the Impregnation of the Seeds, nor are they to be regarded in searching the Class of the Plant.

That is to be sought in the Floscules of the Disk, or Central Part. These are so many distinct Flowers, and they are here of two separate Kinds, both in their outer Form and in their internal Construction.

In the Body of the Disk are plac'd many of these, which are tubular, small at the Base, expanded at the Mouth, and there divided into five Segments. On the Verge, or round it, are set ten or more Floscules of a different Form, tubular and small at the Base, but at the Rim flat and plain, terminating in three Points.

These distinct Kinds of Floscules are found in many other of the Composite Flowers, and are distinguish'd by peculiar Names: the hollow ones occupying the Centre of the Disk, are call'd *tubulated*; and the flat ones at the Edge, *ligulated*: these let the Student retain in his Memory: they are the distinctive Terms of Science.

In each of the tubulated Flowers, occupying the Centre, are five short Filaments, whose Buttons coalesce, and form a tubular Body.

In the ligulated Floscules of the Rim, there are no Filaments, but only the Rudiment of the Seed with its Stile.

The tubulated Flowers are therefore understood to be hermaphrodite, and the ligulated female.

The tubulated are the only perfect ones, and therefore it is in these the Student seeks the Characters of the Class. He sees the Buttons of the Filaments coalesce, and this declares the Plant to be of the Nineteenth, the *Syngenesia*: the Character of that Class being the Coalescence of the Buttons into a Cylindric Body.

It remains, that he enquire under which of the several Sections in that Class it is to be arrang'd.

These Subdivisions are here form'd upon the Manner of the Impregnation.

The Student has observ'd that the female or ligulated Flowers are deficient in the male Parts; and we have told him those of the tubulated Kind, in the Centre, are hermaphrodite; that is, they are not defective in the female Parts.

When he has observ'd the Construction of the Filaments and their Buttons, let him remove them, and he will find within the Base of the Floscule a compleat Rudiment of the future Seed, with its slender Style crown'd with a divided Top, or Stigma; this shews that all the Parts of Fructification are in these Flowers, and this explains the Manner of Impregnation.

The Dust from the Buttons impregnates the Rudiment of the Seed within the same Flower;

and such of it as is scattered by the Motion of the Air, falling casually into the ligulated or female Flowers of the Rim, which have no male Parts of their own, impregnates also the Rudiment of the Seed that is in them. This give Origin, in the LINNÆAN System, to the Term *Polygamia*; that is, that the Impregnation of the Seeds perform'd in various Manners.

In this Plant we see the Business of Fructification could be carry'd on without them; for the tubulated Flowers have Seeds of their own, which would ripen from the Dust of their Buttons.

Hence rises a second Distinction, which is that of *superfluous*: there are Plants of this *syngenesious* Class and of the *polygamous* Division, whose Central Flowers, which have the Buttons or Male Part, are defective in the Rudiment of the Seed, or in some of those Organs by Means of which it should be impregnated: in these the Dust of the Buttons serves only to impregnate the female Parts in the ligulated Flowers of the Rim.

In this Case, the various Distribution is deem'd *necessary*, and thence the Origin is taken of a new Subdivision.

It is in Distinction from this, the Plant, now under Consideration, is call'd one of the *polygamous superfluous* Kind.

It's Place therefore in the LINNÆAN System, is among the *Syngenesia polygamia superflua*.

Let not the curious Reader slight this Disquisition; there are many other Plants of the same Character: and the proper Effect of the Enquiry, is not Neglect, but Wonder.

Culture of the SHRUB ASTER.

We have occasionally observ'd already, this Plant may be rais'd either from Seeds or Cuttings; but the Gardener is not to suppose, for that Reason, the Choice is a Matter of Indifference. The Cuttings are only to be employ'd when Seeds cannot be had, or when the Impatience of the Proprietor prefers sudden to perfect Growths.

We shall recommend the Method by Seeds; and whether they be obtain'd from *Africa*, or sav'd here, the Method is to be the same.

Let a Hot-Bed be prepar'd for them early in Spring, and at the same Time let this Compost be made.

Throw in a Heap two Bushels of Wood-Pile Earth, one and a half of Mould, from under the Turf in a rich Pasture; five Pecks of Sand, and one Peck of wet Dust, from some Road where Horses stale; mix this very well together, and sprinkle over it six Ounces of Salt: let these be turn'd, from Time to Time, and let no Weeds grow upon them.

At the same Time the Compost is made, let the Seeds be sown. This is to be done, and the Plants manag'd in the common Way.

We have describ'd this at large now in several Instances; and shall not, like others who have written on this Subject, swell the Pages with a tedious Repetition.

From the first Hot-Bed they are to be transplanted to a second, thence into Pots of this Compost; and, after that, they are to be expos'd

Nov. to the Air in the Height of Summer; remov'd at Autumn into the Green-house; and if need be, in Winter, into the Stove.

All that is requir'd particularly, is, that they be water'd often. The Wet will readily run off thro' this loose Soil, if the Openings be not clog'd: and when the Buds appear for flowering,

they must be hous'd, and kept well water'd, and duly warm. Nov.

By this Management, if the Gardener be careful to nip off the Flowers as they fade, there will be a Succession from *September* to *April*, and a vast Number on the Plant at a Time.

2. CARIBBÆAN SWEET PANCRATIUM.

Pl. X.
Fig. 2.

This is one of the fragrant Beauties of the warmer Climates, which will live freely in our Country with a suited Care, and will very amply repay the Attention that is bestow'd on it.

The common Writers have call'd it a *Narcissus*; for the true Distinction of the Bulbous Plants is but of late Origin: the World owes it to the Labours of LINNÆUS.

COMMELINE names it *Narcissus Americanus flore multiplici albo hexagono oderato*.

SIR HANS SLOANE, by a much better constructed Denomination, *Narcissus totus albus latifolius polyanthus major odoratus*.

LINNÆUS, in his more accurate Distinctions, refers it to the *Pancratium* Kind, and calls it, *Pancratium spatha multiflora foliis lanceolatis*: Many flower'd *Pancratium*, with spear-pointed Leaves.

The Root is a Bulb, of the Bigness of a Man's Fist, and of a Pound or more in Weight: its outer Coat is of a reddish brown; the inner ones are white; and from the Base run many thick white Fibres.

The Leaves rise in a Cluster, and are two Foot long: they are considerably broad, sharp-pointed, and of a lively green. They have many Ribs running length-wise, and these swell out in the under Part.

The Stalk is flatted, thick, upright, and of a pale green. It rises in the Centre of the Leaves, and is two Foot or more in Height.

At its Top appears, at first, an oblong Bud; which, when the Stalk is at its Height, bursts, and discloses a rich Cluster of large and most extremely fragrant Flowers.

These are of a Snow-white throughout, and of considerable Duration: and when they fade, there appears, after each, a short three-corner'd Seed-vessel, full of numerous round large Seeds.

Thus much the vulgar Eye perceives; but that of Science will penetrate farther.

The whole Cluster of these noble Flowers was at first enclos'd in a leafy Scabbard, which shew'd itself upon the Summit of the Stalk: this bursts side-ways to give them Room, and divides into two or three Parts; after which, having perform'd its Office, it fades, withers, and falls.

Each Flower consists of a Nectarium and six long Petals. The Nectarium, which in the generality is small and inconsiderable, in this is large, conspicuous, and forms the Body of the Flower; the Petals being inserted into it.

This rises with a slender tubular Base, which,

by Degrees, expands; till at the Rim or Mouth it is very wide, and is divided into twelve Segments. On this are inserted the Petals and the Filaments.

The Petals rise from its Outside, somewhat below the indented Verge, and they are very long, narrow, and turn'd backward.

Upon the Edge of the Nectarium are plac'd the Filaments. These are six. They are long, slender, and very conspicuous: their Base is whitish ting'd with green, and their Buttons are of a shining yellow.

In the Centre of these rises, from the Rudiment of the Seed-vessel, a single slender Style, which has an obtuse Top.

If this had been the first *Pancratium* we had describ'd, the Student could not have been at a Loss to have discover'd what were its Class and Place in the LINNÆAN System. Six Filaments and a single Style declare it to be one of the *Hexandria Monogynia* of that Author; those which have six male Parts, and the female single.

The Bigness and the snowy Colour of these Flowers, added to their Number in the Cluster, which is usually ten or twelve, would sufficiently claim for it a Place in our Collections; but there is nothing in the Flower-Kind which at all resembles its Fragrance. This is in the highest Degree delightful and peculiar.

We are accustomed to the Sweet of the *Jonquill*, and other Flowers of Kinds approaching to the *Pancratium*; but there is in them a Faintness with all the Fragrance. The Scent here is mix'd of the perfume and aromatic, and resembles that of some among the richest of the Oriental Balfams; filling the Sense, without palling or disgusting it.

Culture of the CARIBBÆAN PANCRATIUM.

There is something peculiar in the Soil where this Plant naturally grows, and that we should imitate.

It is a Native of the hottest Parts of the *West-Indies*, and there bursts out among those scattered Bushes which edge their Forests. It loves some Shade, and a light Earth, enrich'd by rotten Wood.

This we can easily give it here; and on the right Management, in this Respect, will depend the Glory of its Flowers.

Prepare for the Reception of the Roots the following artificial Soil:

Mix equal Parts of Earth from under the Turf in a good Pasture, and that from the Bottom of a Wood.

Nov. Wood-Pile; add to this one eighth Part of large Sand, and scatter over it a little fresh made Lime.

Let this lie four Months to mellow, and it will then be ready for Use.

Fill half Way up with it several Pots, and place evenly upon it Roots obtained from the *West-Indies*; or Off-sets from such as have grown in other Gardens. The Difference is very great; but when the fine native Roots cannot be had, we must be content with the others.

The taking away the Off-sets is an essential Part of the Care and Management of the Plant, because they always weaken it when they are suffered to remain, and prevent the Beauty of its full Tuft of Flowers. Whether separated from them for this Cause, or obtained for the raising of the Plant, the Management must be the same as that of the full grown Roots brought over for that Purpose.

If there be an Opportunity of getting well grown Roots from the Spot, Directions must be given for taking them out of the Ground as soon as their Leaves are withered, and tying them up singly, for sending over by the first Ship. They will come thus without the least Damage, and will rather be strengthened than hurt by being kept that Time out of the Ground.

Various as the Condition and Value of these several Kinds of Roots and Off-sets are, the same Method is to be followed.

Let some Pebbles be put into the Bottom of each Pot; and then as much of the Compost poured in as will half fill it, or more, if for an Off-set; but somewhat less if for a full grown Root.

As soon as the Roots arrive, plant them one

in each Pot; or if they be Off-sets, as soon as they are taken from the Mother Root. Nov.

Pour in more of the Compost about them, and let it rise half an Inch above their Head.

Let the Pots be then set in a warm, sheltered, and shady Place: give them once in four Days a very little Water, and thus let them remain till Autumn. Then bring them into the warmest Part of the Garden, and let them stand till the cold Nights begin to threaten.

They will by this Time have sent up the first Shoots of their Leaves; and they must then be removed into the Greenhouse, and after some Days into the Stove. Here they are to be watered now and then; and the Earth at Times stirred at the Top of the Pots. They will thus get Strength during the Winter; and the next Year the full grown Roots will flower: sometimes during the Winter.

The Off-sets will be longer before they shoot for flowering; and if Care be omitted, they will come on but weakly: but with right Management they will in Time become equal to the full grown Roots, except to such as are new brought from their native Climate.

After this they must be taken up once in two Years, and their Off-sets removed and nursed up several together in a Pot, till they come towards flowering.

This is the Method of making this elegant Plant flower favourably; and of ensuring a Succession: all that is required to give it Strength for flowering well, is to pare away the upper Part of the Earth once a Year; and when the Shoot for a Stalk appears, to forward it by frequent Waterings.

3. HERBACEOUS TETRAGONIA.

Pl. X. The Singularity of this Genus could not fail of recommending it to the Curious, tho' it were wholly defective in Point of Beauty. Fig. 3.

Every one who has treated of it has been struck with the Peculiarity of its Aspect; and many have described, who know not what to call it.

SEBA has given a Figure of a shrubby Species of it, under the Name of *Eunonymo affinis portulacæ folio*: and COMMELINE calls this *Tetragonocarpus Africana radice magna crassa et carnesa*.

LINNÆUS softens the Name, and writes it *Tetragonia*, adding a Distinction from the Figure of the Leaves, *foliis ovatis*: oval-leav'd *Tetragonia*. The other being shrubby, and this a tender stalked Plant, the familiar *English* Name is derived thence, Herbaceous *Tetragonia*.

The Root is vast soft, tender, yellow, and long, hung with a few Fibres, and of a pleasant Taste.

Many Stalks grow from the Head of this,

and they spread wantonly upon the Ground, straggling irregularly on the Surface free, or entangled one among another. They are round, tender, purplish or yellowish at the Bottom, elsewhere green, and not much branched.

The Leaves are placed upon them singly and irregularly.

They are small at the Base, and gradually enlarge to a broad rounded End. Their Colour is a lively green, and their Ribs are scarce perceptible. They are thick and juicy, and have a pleasant sub-acid Taste.

The Flowers are very numerous, and of a perfect gold Colour. They are not large, but each has in its Centre a vast Tuft of Filaments, all of the same gold yellow.

The Seed-Vessel is very singular; it is of a square Shape, and of a woody Substance. Four Edges mark the Angles, and they are raised into a Kind of Wings. Within is contained a single Stone, in which are four Kernels.

The Flower is placed singly on its Foot-stalk, and

Nov. and has no Petals. The Cup is very considerable and conspicuous: it is composed of four yellow Leaves, which from their Colour are, by less accurate Observers, taken to be Petals, and properly to compose the Body of the Flower; but they are evidently no more than a Cup; and they are permanent, remaining with the Fruit.

The Tuft of Filaments amounts to twenty; they occupy the Centre at their Origin, and spread out at the Ends; and they have oblong Buttons.

From the Insertion of these Filaments the Class is to be determined. We have acquainted the Reader that the Icosandria and Polyandria in the LINNÆAN System, the twelfth and thirteenth Classes, differ only in the Place where the numerous Filaments characterising both arise. In the Icosandrous Class these Filaments grow to the Inside of the Cup; and in the Polyandrous to the Receptacle. This last is their Place in the present Plant; therefore it is one of the polyandria of that Author. Thus far having been examined, the Styles are to be sought. They occupy the Centre of the Tuft, and they are four: therefore the Plant belongs to that Division of the Polyandria, which is thence called Tetragynia.

Culture of the HERBACEOUS TETRAGONIA.

It is a Native of *Africa*, and there thrives best in deep rich Soil, where there is some Shelter.

This we are to imitate. The Seeds are the proper Source for propagating it: and as they ripen very well with us, they may be saved for that Purpose here, when there is not an Opportunity of having them from abroad.

These should be sown in the open Ground in the following Manner.

Dig up a Border, or Piece of a Border, where the Mould is very fine, and well enriched with Dung that has had Time to rot in it. Rake the Surface even, and scatter on the Seeds.

Sift over them the same Mould half an Inch thick, and then throw some Furze Bushes upon the Ground. Over these lay a Mat, raising it with a Brick here and there at the Edges.

In this Method the Ground will be kept warm and moist, and there will be Air.

These are the Advantages the Seeds want; and in this Condition they will shoot in a moderate Time; otherwise it is very uncertain whether the Plants will rise at all, or when.

Here let them take their Time; for according to their Age, their Degree of Ripeness, and Manner of curing, they will shoot much sooner some Times, and at others later.

When they begin to appear, let the Mat be raised higher from time to time; and the Furzes being removed, let them have frequent gentle Waterings.

When they have obtained five Inches in Height, let them be planted out into Pots; and no Compost made for them, but only use the best and richest Garden Mould.

Let a little of this be put in the Bottom of each Pot, and then a Plant raised with a good Ball of its own Earth about it: let this be placed upright in the Pot, and then the whole filled to the Rim with Mould.

When it is well fixed give a gentle Watering.

All the Plants being thus potted, let them be set in a shady shelter'd Place, and once a Day water'd, till they have taken Root.

Then let them be plac'd among the Green-house Plants, and at the Approach of Autumn remov'd into Shelter.

They will often flower the first Year, always the second: and their wild Way of hanging down the Sides of the Pots is very pleasing.

In Winter they must have a little Water, and a great deal of Air.

They are hardier than most of the *African* Plants; but they die if choak'd.

4. SPOTTED AFRICAN HEBENSTRETIA.

Pl. X. This is another of those Exotic Plants whose
Fig. 4. Singularity is its great Recommendation. It has nothing of that gorgeous Beauty which fills the Eye in the large-flower'd Plants; but Variety is to be consulted in these Collections next to Shew. This Plant serves excellently for that Purpose, and at the same Time is not without its Prettyness.

Most who have search'd *Africa* for Plants, have been struck with the Singularity of this, and have given it a Place in their Works, tho' uncertain to what Genus it belong'd, or by what Name to call it.

BURMAN makes it a *Pedicularis*; COMMELINE, a *Valerianella*; and RAY calls it *Valerionoides*.

This Diversity shew'd the Defect of a new Genus, which LINNÆUS has supply'd, calling it *Hebenstretia*; and adding, for Distinction, *foliis dentatis*: Dentated-leav'd *Hebenstretia*.

The Root is fibrous, whitish, and ill-tasted.

Nº 10.

The Stalks are numerous, and grow irregularly. Some lean upon the Ground, and others straggle irregularly over the Surface; but those in the Midst usually rise tolerably erect, and are a Foot and half in Height. They are round, edg'd, tender, purple at the Bottom, green toward the Top, and not much branch'd.

The Leaves are numerous, and plac'd irregularly: they have no Foot-stalks, and their Colour is a lively green, often ting'd with purplish. Those, from the Root, are very deeply divided; those on the lower Part of the Stalk sharply dentated; and such as grow toward the Top, not at all serrated.

The Flowers are small, but their Disposition renders them conspicuous. They stand in long Spikes at the Tops of all the Branches. Their Colour is a pure and perfect white; but in the Centre there is a Spot of a fine glowing red.

G g

Each

Nov. Each Flower is plac'd in a Cup form'd of two Segments, divided in the Manner of Lips; the lower of which is irregularly shap'd, and much longer than the other.

The Flower itself is form'd of a single Petal; and is tubular at the Base, and divided at the Extremity in four Places: it runs up in Form of a single Lip, answering to the under Lip of the Cup. From the Sides of the Lip, toward the lower Part, spring four Filaments, crown'd with their Buttons; they are all short, but two of them are somewhat longer than the others; and from the Base rises a single Style.

This Distribution of the internal Parts, marks very plainly the Place of the Plant in the LINNÆAN System. It is one of the *Didynamia*, Plants whose Flower has four Filaments, of which two are longer than the others.

To know in what Section of that Class it is to be plac'd, we are left to examine the Seed. This, in some of the *Didynamia*, is enclos'd in a Capsule, and in others stands naked; hence rise the Characters of the two Subdivisions, the one being call'd *Gymnospermia*, and the other *Angiospermia*.

The Seeds in this are contain'd in an oblong, conic, and sharp-pointed Capsule: it is therefore one of the *Angiospermia*.

Culture of the HEBENSTRETIA.

Nov.

This Plant is a Native of *Africa*; and it there grows in dry loose Soils. We have from this the general Rule for its Culture.

Let a Compost be made for it in Spring, of fresh Mould, Sand, and Wood-Earth, each equal Quantities; and let this lie together, till the Plants rais'd from Seeds shall be fit for Potting.

They may be rais'd either from Seeds imported from *Africa*, or from such as are ripen'd here.

Which ever are chosen, they must be sown early, on a Hot-Bed; transplanted afterwards to a second, and then planted out, into Pots of this Compost.

In these they must be, by Degrees, harden'd to the Air; and when they have acquir'd a due Growth and Strength, they are to be set out among the Green-house Plants, and remov'd into Shelter in Autumn.

When the Plants have been thus rais'd, they may be propagated farther, by parting of the Roots; but that Method does not afford either so large or so handsome ones as those rais'd from Seeds.

One great Disadvantage attending the latter Method, is, that for several Seasons they blow weakly and poorly. Bad Management will also lose the Spot in the Flower.

5. The SCREW TREE.

Pl. X. If any Vegetable can, for its Singularity, demand a Place in our Exotic Collections, this it will be impossible to refuse.

Fig. 5.

The Leaves, if the Growth should never advance farther, are very large and handsome: the Flowers have their Beauty, and the Seed-vessel has a Singularity of the most extraordinary Kind.

We name it from the Figure of this Part, the *Screw Tree*.

Some call it, after its *Indian* Denomination, *I-sora*, that being *Ifora Murri*.

Sir HANS SLOANE has describ'd it under the Name of *Abutilo affinis fructu funis ad instar convoluti*.

LINNÆUS calls it *Helicteres*; adding, by way of specific Distinction, *foliis cordatis serratis, fructu composito contorto*: Heart-like and serrated-leav'd *Helicteres*; with a compound twisted Fruit.

In its native Climate it rises to a middle-siz'd Tree; and with us will grow to a good Height and in a beautiful Proportion.

The outer Bark is of a greyish brown, the inner green, and the Wood whitish. The Rind of the young Shoots has an austere Taste.

The Leaves have short brown Foot-stalks; and they are themselves large and very handsome: they are broad, finely colour'd with a strong green, and of a firm hard Substance. They are somewhat hairy on the upper Side; and their Taste is austere and bitter.

The Flowers grow from the Knots or Joints of the young Branches; sometimes singly, sometimes two or three together, and they have short pale Foot-stalks. They are of a delicate Texture, and of a very glossy and beautiful yellow.

Each is plac'd in a Cup form'd of a single Piece, tubular at the Base, and divided by three deep Indentings at the Top, where it opens in an oblique and very peculiar Manner, resembling the Ear of some Quadrupede. The Substance is tough, and the Colour yellowish.

The Flower itself is compos'd of five deep Segments, resembling so many Petals, and there is within it a Nectarium, compos'd of five Parts, resembling so many more Petals, tho' small; and covering the Rudiment of the Fruit.

Upon this Rudiment at the Base stand ten very short Filaments, on which are plac'd side-ways as many oblong Buttons. In their Midst rises a single Style, which is very long and bent, and bears upon its Top the Germen, which is there roundish. The Fruit follows; and exceeds that of all the Vegetable Kind in Singularity. It resembles a spiral Shell or Screw: it is long and slender; largest at the Base, and pointed at the End; and twisted.

It is compos'd of five very long and very slender Capsules, which turn in a spiral Manner round one another, and resemble the several Threads of which a Rope is form'd. In each of these there are several Seeds, which are small and Kidney-shap'd.

The



2
Caribbean Sweet Pancratium

3
Herbaceous Scilla

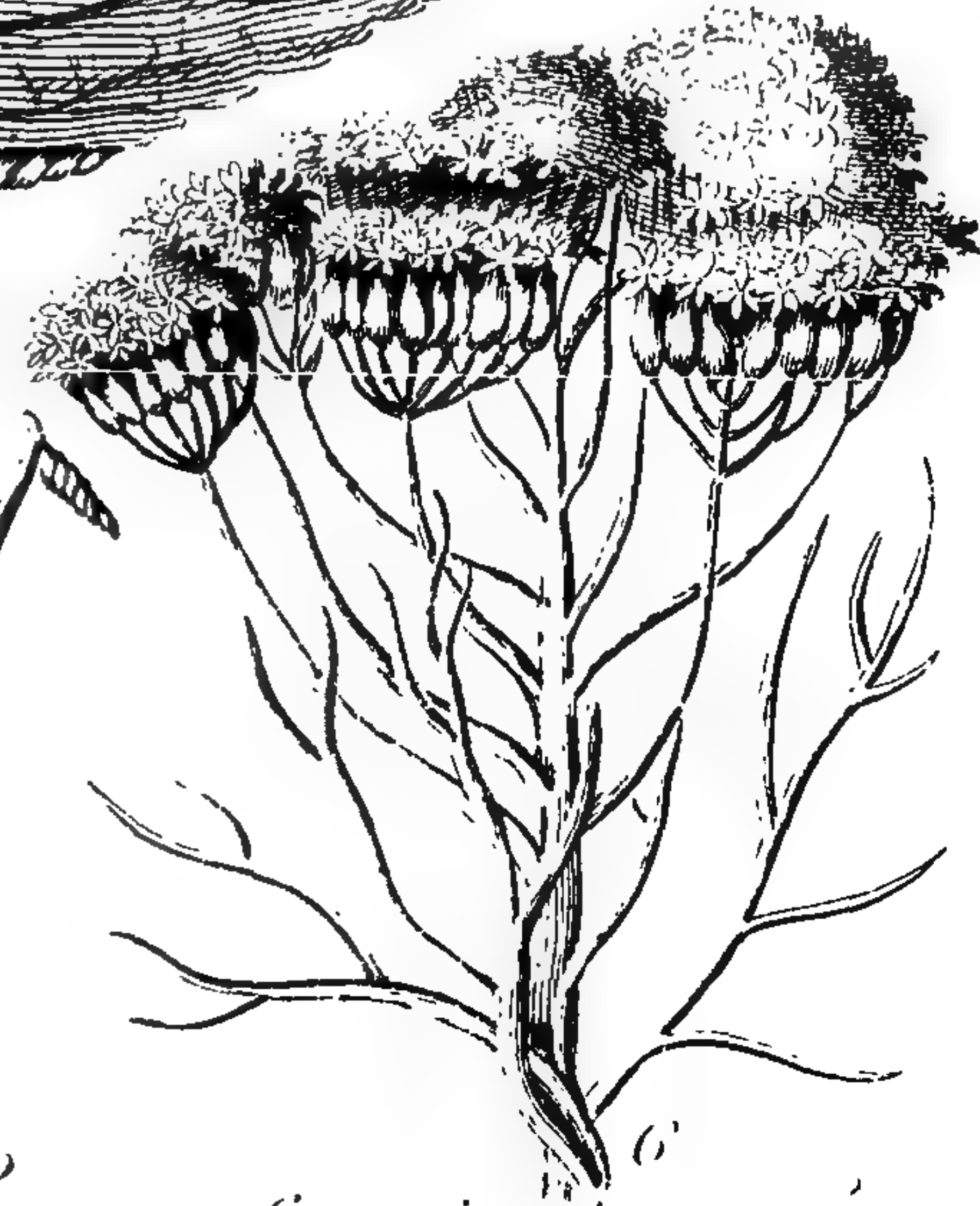
White Throat Aster



5
The Sereno Tree



4
Spotted African Heliconia



6
Sampire leaved San-y

Nov.

The Student observing the Place of the Filaments in this Flower, will recollect that it is the Character of a peculiar Class. The *Gynandria* (Twentieth in the LINNÆAN System) comprehends those in whose Flowers the male Parts or Filaments, bearing the Buttons, grow upon the female. This is here the Case, and the *Helicteres* is therefore one of them.

The subordinate Distinctions of this Class are made according to the Number of the Filaments: that being only the Mark of a separate Section here, which would be, if they grew otherwise, the Character of a Class. The *Helicteres* having ten Filaments, belongs to the *Decandria*, which is the sixth Section.

Culture of the SCREW TREE.

Nature has generally plac'd this Tree in a loose light Soil; but such as has some Richness: this we should imitate; and adding to this a Degree of Warmth, suited to that of its natural Climate, we shall do all that can be requir'd for its Growth and Preservation. Let the Soil for it be thus prepar'd:

Mix together two Bushels of dry Pasture Earth, one and a half of large Sand, one Bushel of Wood-Pile Earth, and one Pound of Stone-Lime. Lay these together early in Spring, and they will be mellow by the Time they are wanted.

This being prepar'd, the Seeds of the Tree are to be sown. They should be obtain'd from Abroad in the Fruit, which will preserve them very well, and they will be fit for Vegetation. They may be had from the *East-Indies* or the *Bahama Islands*; and they are to be sown thus:

Fill a Couple of Pots with good Garden-Mould,

and scatter upon the Surface the Seeds, thin and sparingly: cover them a Quarter of an Inch, or a little more, with the same Earth, and set the Pots in a Bark-Bed of temperate Heat; give them a gentle Watering, and at Night draw a Mat over the Glafs of the Frame.

In the Day remove the Mat; and when the Sun is hottest, open the Bed a little, by raising the Glafs with a notch'd Stick. Water the Earth very gently from Time to Time; and when the Plants appear, continue these Waterings; only be careful not to beat down their Stalks.

All this while let the Earth, prepar'd for their Reception, be turn'd from Time to Time; and let the Air be admitted to the Plants in the Middle of the Day.

When they have got some little Height, let them be transplanted each into a separate Pot fill'd with the Compost, and gently water'd, and then set into the Bark-Bed again.

From this Time they will only require to be water'd and shaded till they are well rooted, and then to be harden'd by Degrees to the Air, by opening the Glafs of the Bed in the Middle of the Day; and nourish'd by frequent Waterings.

When they have thus acquir'd some Strength and Hardiness, they must be remov'd into the Stove, for they will not at any Time be safe in the open Air.

In the Middle of our hottest Days, the Glasses of the Stove must be open'd, to give them and the other Plants free Air, and they must be water'd frequently. At Times they must be transplanted into Pots of a larger Size, fill'd with the same Compost; and in these they will flower the third Year.

Nov.

6. S A M P I R E - L E A V ' D T A N Z Y,

Pl. X.
Fig. 6.

This Plant does not want Beauty to plead its Admission into our Collections; and it has, with that, a great deal of Singularity.

Most of the late Authors have describ'd it; but it has had almost as many Names, as they are who have mention'd it.

COMMELINE calls it an *Elicbrysum*; PETIVER an *Ageratum*; and VAN ROYEN a *Santalina*. This last Name was given it also by LINNÆUS in his earlier Writings; but in his later, upon more accurate Enquiry and Distinction, he has refer'd it to the Tanzy Kind.

He calls it *Tanacetum foliis pinnatis, pinnis linearibus, remotis, integerrimis*: Pinnate-leav'd Tanzy, with narrow, remote, and undivided Pinnæ.

It is a tall and handsome Plant. The Root is brown, thick, and hung with many white Fibres.

The Stalk is upright, firm, and branched: and it is round, smooth, and of a shining brown.

The Leaves are extremely singular and beautiful. They are of a fine green, thick in their Substance, rounded in the Segments, and very slender; and in the whole Leaf they resemble, in some Degree, a Deer's Horn.

The Flowers are, singly, very small; but they

are dispos'd in vast Clusters, in a Manner resembling those of the *umbelliferous* Plants: their Colour is a very bright and glorious yellow, and they have under them some dry shining leafy Scales, which add greatly to the Beauty as well as Singularity of their Aspect.

The Seeds follow, and are wing'd with Down.

The Whole examined together, is found to be of the Nature of the Composite naked Flowers. A Number of Floscules are collected into a common Head, surrounded by a scaly Cup; and several of these Heads, arrang'd together upon the Extremities of the Top-Branched of the Plant, form the general or great Tuft of Flowers, which strike the Eye so pleasingly in the first Aspect.

Each smaller Cluster or Head has its several Floscules contain'd in a common Cup; this is roundish, and compos'd of numerous little Scales, of a dry Substance and glittering Surface, closely plant-ed one by another: these are the shining leafy Substances the Eye first distinguishes under the Flowers.

Thus much being understood of the general Disposition and Arrangement of the Heads, their separate Floscules (which tho' distinguish'd from their Minuteness by that peculiar Name, are really distinct Flowers) are to be examined.

This

Nov. This will be the more familiar to the Student, as we have already explain'd to him the Structure of some other Flowers of the same Nature.

In some Plants of the same Class with this, we have inform'd the Student, that there are in each Head or common Flower, Floscules of two Kinds, tubulated and ligulated: in this, as also in many others, they are uniform, or all alike. It is therefore a Matter of Indifference where he chuses one of them for his Examination.

Let him separate any one Floscule; observe it first entire, and afterwards split open.

While entire, he will perceive it is form'd of a single Petal, and that it is tubular, and at the Edge divided into five Segments, which turn back.

Then opening it carefully length-way, by a Needle, he will perceive in it five very small Filaments, with their Buttons or Antheræ coalescing, so as to form a Cylinder; and in the Midst of these a single Style, with its Top split.

This shews the Class of the Plant. We have observ'd, that those which have the Buttons on the Filaments thus coalescent, form the Nineteenth in the LINNÆAN System; the Title of which is *Syngenesia*: and as the Flowers are all here similar, and serve mutually to impregnate themselves and one another, it belongs to the Subdivision of that Class, which is distinguish'd by the Term *Polygamia equalis*.

Culture of the SAMPIRE-LEAV'D TANZY.

This singular Plant is a Native of *Africa*, where it is only found in the best and richest Soils.

This is to be one Rule for managing it: a Thing neglected hitherto by Gardeners; but, in Reality, the only Guide they can have for the proper Culture of any Exotic Plant.

In Autumn, let there be a Quantity of Earth cut from the Surface of a very rich Pasture, with the Turf upon it: let this be taken five Inches deep; and put of it two Barrows full in an expos'd Place. Lay upon this two Barrows of River-Mud; one Barrow of Earth from under a

Nov. Wood-Pile, and one of rotten Dung, from an old Melon-Bed.

Stir all these together, and bury the Turf-Earth, so that the Grass and its Roots may rot.

This prepares an excellent rich Soil for those Exotics which require such; and this Quantity will serve for several.

Let it be turn'd after some Time; and when the Turf is broken and decay'd, let this Turning be repeated frequently.

The Earth being prepar'd, the next Care is for the Seeds. They will be best if obtain'd from Abroad; if not, let such as were ripen'd here be us'd.

They are to be sown on a Hot-Bed, in Spring; and when the Plants are four Inches high, the best of them are to be remov'd into small Pots of this Compost.

These are to be set in a Bark-Bed, and shaded till they have taken Root; after which they must be harden'd by Degrees to the Air.

When they are grown to a good Bigness, they must be remov'd into larger Pots, taking all the Earth of the first with them, and only trimming round the Fibres.

In these they must be shelter'd a little while in the Bark-Bed; and after hardening by the Air, admitted in the hottest Time of the Day by raising the Glasses, they may be set out among the other Greenhouse Plants; with which they must be taken in at the Approach of Winter.

They will flower the first Year; and they are never so beautiful; because the Plant has then all its Verdure. It is at the same Time covered to the Bottom with its fresh green Leaves, that the golden Flowers in their enamel'd Cups adorn its Top.

After this it will flower stronger; but it will be more rank, and less handsome in its general Growth; and the Leaves will decay toward the Bottom.

This is a Reason why the Plant should be rais'd every Year from Seeds: but at the same Time we advise the Gardener always to keep a three or four Year old Plant for Seeds, because such bring them to the greatest Perfection.



CHAP. II.

The Management of the Flower Garden for the present Week.

NOVEMBER is a Month in which Frost closes the Ground against the principal Labours of the Gardener; and he must submit to it when it comes on with any Severity, for there is no warring with the Elements.

He is therefore to consider the Business of this, and the succeeding Weeks, as divided into two Kinds, according to the Weather: in such as is somewhat milder, he may work upon the Ground, and prepare and manage his more hardy Plants; and when it is more severe, he must employ himself in defending the tenderer Kinds, by sheltering

them with Mats, Straw, or other Covering.

In this Manner he is to consider the Labours of the Winter Months to be divided: and in the very worst Weather, he can be cleaning his Seeds, and preparing his Tools and Instruments for a better Season.

As the first Week of *November* is generally somewhat mild, let him take the Advantage of employing those, perhaps, last Days of an open Season, in cleaning his Ground and finishing his Autumnal Plantations.

To shew him the Necessity of the first of these two Articles, we shall explain to him the Nature of

Nov. of the worst Annoyance that is to be expected at this Season: this is from the Growth of Moss.

It will spread upon the Borders wherever it is over-look'd; and run up the Bottoms of the Flowering-shrubs planted in them, to their great Damage.

Nothing prevents this but the Destruction of the young Plants, before they can be seen; for when they are big enough to be visible, it is very difficult to get the better of them.

This is to be done by breaking the Surface of the Borders, and now raking them a-fresh even where they appear already clean; for it is then the Shoots of Moss are so weak that they will be easily destroy'd.

Let not the Gardener think hardly of this Trouble. There is a Pleasantness to the Eye in new-broken Earth; and when there are no Flowers left in the Borders, this gives an Air of Culture; and is always agreeable.

There is little Danger now of any considerable Rise of Weeds upon the Borders, for this Season does not favour their Growth; but some there will occasionally peep out, and they are thus destroy'd at their first Shoot. It is not with Moss as with the larger Plants: this is the great Period of its Growth; for it defies Cold; and the Wet favours it.

Every old Wall is covered with it, and the Seeds now ripen in innumerable Quantities, in those small brown Heads which are supported on their slender Stalks; rising, according to the Kind, from the Centre of a Tuft of Leaves, or from the Joints of the Branches.

These Seeds the Wind scatters; and they are so light, and the Plants so universal, that no Spot of Ground can be at any Time secure from them.

Moss is of a vast Variety of Kinds; but there is one Distinction which will serve all the Purposes of the practical Gardener. Some Kinds spread out in long Stalks and Branches; and others rise in little round Tufts, which, by Degrees, encrease, spread, and unite with one another.

The generality of the branched Mosses are of the *Hypnum* Kind, and most of the tufted ones are *Bryums*. Either, if neglected, will in a little Time spread over a large Piece of Ground; and it is now they begin to propagate.

The Seeds of both Kinds will, at this Time, be scattered by the Hand of Nature over the Borders: this is the Reason why the Ground should be stir'd to prevent their Rooting.

The Surface of all the Ground being thus clean'd, let the Gardener consider whether he any where wants Perennial Flowers. If he do, let him seize this Opportunity, almost the last that will offer of planting them.

Some of the *Campanulas* may yet be planted safely; and so may the hardier of the *Monk's-hood* Kind, and the *Pionies*; the tall *Speedwells*, which make a very pleasing Variety in a Garden, and the *Doronicum*, the *Tangier Fumitory*, and some others.

When he has plac'd these where they are wanted, comes the Consideration of planting

Flowering-Shrubs: this may yet be done in some Nov. Soils, but not in others.

The Advantage of planting now, rather than in Spring, is evident; for the Shrubs will take some Root, and establish themselves in the Winter, so that they will be much forwarder in Spring; but there is the Danger of their being destroy'd by Frost.

We have inform'd the Gardener, that Frosts affect Plants much more severely where the Ground is wet, than where it is dry; therefore on this Point must turn the present Enquiry.

If the Soil be wet, let alone the planting them till Spring; but if it be dry, let that Work, by all Means, be perform'd now; for he must be an ill Gardener that would give up the Advantage we have nam'd, when there is no Danger.

The fittest Shrubs for this Plantation, are the *Syringa*, *Laburnum*, *Spiraea*, and *Jasmine*: there may also be Lilacs and Honey-suckles, with many other of the hardier Kinds.

The Method to be follow'd is this: Let the Ground be well open'd, and the Mould carefully broke for their Reception: then the Shrubs are to be brought from the Nursery, where they may have stood about two Years; if planted from Suckers.

We have already directed the taking off the Suckers of Lilacs, and other such Flowering-Shrubs, in Autumn, and planting them in the Seminary. After two Years standing, they become fit for the present Service.

The *Syringa* is a very proper one for this Time of Planting, because it will well thrive in that Sort of Soil, which, from its Dryness, is fittest for the Winter Planting: but here we shall remind the Gardener, that when he is making his Plantation, it is as easy, and very near as cheap, to put in good Kinds as bad ones.

We would not banish the common *Syringa* from Gardens; but we are sorry to see it take the Place alone. The Gardener is to know there are two others; the one with the Leaves striped, edg'd, and blotted with a golden yellow; and the other with the Flowers double.

Let these no more banish the common Kind, than that exclude them; they have greater Beauty, and that a superior Fragrance: therefore let them all have their Places.

Let each of these, when planted, have the Earth carefully laid in about the Roots, and let it be ty'd up to a firm Stake, to prevent rocking with the Wind; and this is all the Care it will need, beside a little Watering, till Summer.

It will flower the first Season, and afterwards remain establish'd in the Ground.

In the succeeding Years, all that need be done to favour it, is to cut out the dead Wood, and shorten such Branches as grow irregularly, in Autumn; and in Spring to stir and break the Earth about the Roots by good Digging. With this Care it will flower abundantly, and will continue much longer in its Beauty than by any other Management.

S E C T I O N II.

The Business of the SEMINARY, for the first Week in November.

WE have before reminded the Gardener, that in general the Work of one Kind in his Ground is to be continued to another Part at the same Season: 'Tis so in the present Case.

When he has remov'd his Shrubs out of the Nursery into the Garden, he must see what farther remains to be done there under the same Article.

This Week he ought to finish the Transplanting in this Quarter: for the Cold will come on, and it will be better if deferr'd much longer, to let it alone till Spring.

When the first and second Week of *November* are over, he should think the next that comes for this Service is the second in *February*.

Let him see that the Stakes are secure which support his new-planted Trees; and scatter some Haulm of Pease about their Roots, and press it down by Stones; for this will keep the Earth at once moist and warm.

We have nam'd the Spring Plantation in this Quarter, to put the Gardener in Mind of preparing for it. We have told him how much Benefit the Earth gets by being expos'd to the Air and Sun; and that good Tillage is, in this Part, better than Manure.

Let the Ground that is destin'd for the Spring Plantation, have this Advantage to the full; for there is Time for it, and a very useful Season. The Frost will assist the Labour of breaking the Mould; and there is no Time of the Year in which the Air so much abounds with those Principles, that assist Vegetation.

To take the Advantage fully, let the Ground be dug deep, and thrown up in Ridges; and once in a Month, for the whole Winter, when the Weather permits, let it be broke again, and expos'd with a new Surface.

Ignorant Writers call this sweetning the Soil;

but let our Student understand Things better. It is the Course of Nature that Plants exhaust the Nourishment of the Ground: these supply Animals with Food; and the several Parts and Excrements of those Animals, for this Reason, are found all to serve as Manures; enriching the Earth again; as do also the Stalks and Leaves of such Plants as decay upon it.

This is the Round of Nature; and this explains what many have thought so strange, that every Kind of Animal or Vegetable Substance, when in its Decay, serves as Manure.

But, beside these Things, which, restoring to the Soil again those Parts of which the Growth of Plants had robb'd it, give it a Recruit of Strength and Richness, the original Principles of Vegetation and Fertility are lodg'd in the Earth itself, and in the Air and Rains. The Earth can never be so exhausted, but that these will refresh, recover, and restore it; and they will do it, when there is Time to wait their Operation, in a gentle and more perfect Manner than all Manures.

On this Principle depends the Use of Fallowing; and thus should the Ground, in the Seminary, be improv'd: for all Manures are hurtful in this Place.

Let the Earth, thus exhausted by the Growth of Trees, be turn'd up to the Frosts and Fogs, Dews and Rains, the Sun and Winds, and they will fertilize it.

Let frequent Turnings serve to expose it to these Advantages every Month, or oftener, with a new Surface; and as these Turnings will, at the same Time, encrease the Fertility of the Mould, and prevent the Growth of those Weeds, which would exhaust it, there will be every Advantage given it for the Support of the succeeding Plantation.



S E C T I O N III.

P O M O N A, or the FRUIT-GARDEN.

C H A P I.

Products of the Fruit-Garden yet in Season..

WE have warn'd the Reader, that this Article will every Week decline; let him not therefore impute to us that Scantiness of the Account, which is owing to Nature.

Winter is no Time for Fruits ripening; our best Season, in this Country, scarce serves for the better Kinds; and all we can expect now, that Nature yields us little, is the Resource of Art to propagate and ripen them by an unnatural Heat; or to offer us what she has preserv'd.

The Nut-Kind which we mentioned last, continue in being, tho' with less Perfection.

The Service and Medlar are as good as ever, if well kept; and there are Apples and Pears yet of various Kinds.

The Pine-Apple continues, from our Stoves; and Grapes, under a proper Preservation.

The Method we have mention'd of tying them up, will keep many Kinds good yet: but we shall here add a Practice, which Experience has shewn in

Nov. in repeated Instances, will preserve them throughout a considerable Part of the Winter; and keep them with their natural Flavour.

Grapes are not of the Nature of those Fruits that spoil upon the Branches with over Ripeness. Our Seasons do not favour them so much: but the Danger they are exposed to most, is that of Frosts.

Cold takes an Effect upon their Juices, that prevents their keeping.

Upon these two Principles, that Grapes will seldom suffer by over Ripeness; and that they are in great Danger from Frosts, depends the Article of gathering them properly, which is the first Step toward their Preservation.

The Ripeness of Grapes is known by their Transparence on the Bunch, as well as by their Softness and mellow Flavour in the Mouth.

They should be gathered when ripe; therefore if it happen in any favourable Season, that the later Kinds ripen thoroughly before the Frosts, they must be cut for preserving when so ripened.

The late Grapes are the proper Kinds for preserving. As soon as the Frosts come on, the others intended for the same Use must also be gathered; and the following Preparation made for them.

Get two or three sound wooden Boxes of a Foot deep, and about the same Breadth. Let the Length be according to the Quantity of Grapes intended to be preserved in them.

Sift very fine a good Quantity of Wood-Ashes that have been well burnt; those from a Baker's I have always found answer best.

Let both the Boxes and the Ashes be perfectly dry, but not hot; and then spread over the Bottom of each Box some of the Ashes, to cover it four Inches deep.

This being done go out, and in the Middle of a dry Day gather some of the best of the Bunches of Grapes. Examine them, and pick off the green Berries; and any that are eaten by Insects, or decayed: then lay the Bunches Side by Side upon the Bed of Ashes in the Box. Lay the Length of the Bunch the cross Way of the Box.

As soon as the Bed is covered with them sift on more of the Ashes, and let them run in between Berry and Berry upon every Bunch, where they stand separate. When the whole are thus inter-laid, sift over them more of the Ashes till the Box is full. Then set it in a dry Place, but out of the Reach of any Heat from the Fire.

In this Manner let the several Boxes be filled; and I have thus eaten Grapes very good in the Month of *February*.

The Quinces and Medlars will now require to be cleared from the Trees, and a proper Method is to be considered to preserve them. These are not Fruits that keep well for a long Time, but they may be preserved, and even improved for

some Weeks by a proper Management.

Quinces as soon as gathered must be carefully looked over: if any are decayed in Part, these must be separated; and if there be any very unripe, they must be thrown away.

The fine Fruit cleared from them must be piled up in a Heap, and covered with a double woollen Cloth.

When these have sweated a little while, they must be wiped one by one, and laid on Shelves at a Distance from each other.

Medlars, when all are gathered for the last Time from the Trees, must be mellowed by other Means.

Hitherto the Table, we suppose, has been supplied by the best and ripest fresh gathered for that Purpose; but of the Remainder now pulled, the greatest Part will be austere and hard.

Prepare for these a Bed of wet Bran in the following Manner.

Cover a broad Shelf with Bran two Inches deep, and sprinkle over it warm River Water till it is thoroughly moistened, but not made into a Paste. Upon this lay the Medlars, one by one, placing the Bottom downwards, and letting them not touch one another.

When the Shelf is covered, strew over them some more fine Bran, dry, and perfectly free from Lumps.

This should fall between them every where to fill up Crevices; and when they are thus brought level to the Top, as much more is to be sifted on as will cover them two Inches deep. Sprinkle on this some more warm Water, and make it damp; but not so much as the former.

Thus let them lie a Week before they are touched. The Bran and the Water will ferment, and this will bring on a gentle Heat, which will serve in the Place of the Sun-Beams, at a Time when they have no longer Power. The Fruit will mellow thus better than on the Tree; and I have found them always milder tasted, softer throughout, and freer from Rottenness.

Though there will be some of them fit for eating in seven Days, the Generality will not be in order till about a Fortnight; and many will continue good after this three or four Weeks.

Some who use this Method of ripening Medlars, pile up many Layers of them in a Box, with Bran between; but I have not found that answer. They grow rotten instead of mellowing, and the greatest Part of them are never eatable.

At the same Time that a Part of the Medlars are thus hastened to ripen in the Bran, let some more of them be laid upon a Floor covered with dry clean Straw.

Let these be kept separate from one another, and some more Straw thrown over them.

They will come to Maturity more gradually than the others, and will be fit for Table when they are past their Goodness.

Nov.

C H A P. II.

The Management of Fruit-Trees for the present Week.

THE Work of pruning now should be continued with good Care and Affiduity. We have directed at large the pruning of the Peach-Tree in our last Number; and that is in general a Guidance for other Stone-Fruit.

The last of the Grapes having been now gathered, the Vines should be pruned. This answers a double Purpose: it removes at once the great Quantity of their Leaves and useless Parts; and being done thus early, the Fruit will have its full Perfection the succeeding Season.

Vines rarely produce any bearing Shoots from Wood that is above one Year old.

For this Reason the last Year's Wood should be preserved in every Part where possible, and

the old cut out.

The bearing Shoots should be left four Eyes long; and cut just above an Eye, sloping backwards from it.

In the pruning of Apricots Regard must be had to the Strength of the Tree, and of the several Branches. A strong Branch may be left nine Inches long; but a weak one should not be more than five.

The Branches should be un-nailed in order for pruning; and when that is done they must be nailed again, laying them as horizontally as possible; for that Posture best promotes their bearing.

S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

C H A P. I.

Of the Products of the Kitchen-Garden, and Care of the Ground.

WE have nothing to add to the List given in the preceding Weeks of Kitchen-Garden Products; nor is it a great deal that can now be done to the Ground. We therefore comprise this Article in a single Chapter; and make that a short one to give Compass to those Articles under which more is required.

The Cauliflower Plants which we directed to be preserved from Frost by Glasses, must not be buried from the Air.

When there are fine warm and serene Days, as such may come at this Season, let the Glasses be set off from eleven o'Clock to four; and when it is more severe, let them still, tho' not taken off, be raised a little at the Sides, to admit free Air when it is warmest in the bright Time of the Day.

Lettuces that are preserved under Glasses in the same Manner, should have the same Treatment and Advantages; and this will promote, not injure the Growth of that young Salletting we directed to be sowed round the Edges.

If the Frosts come on, scatter a little long,

dry Straw over the Beds of young Radishes; this will mellow the Ground, and preserve the Plants.

In the open Ground there will be Cauliflowers now coming to ripening. These must be defended from Wet and Cold, by breaking in the inner Leaves so as to cover them.

Lastly, for the Business of this Week let the Gardener remember what we have directed in the Nursery: a great deal of the Kitchen-Ground will require to be sown in Spring, and as this is vacant for the Winter, let the same Care be taken of it.

Let the whole intended for this Purpose be well dug, and moderately dunged; for in this Part of the Ground there should be the joint Assistance of Tillage and Manure.

Let it be exposed in Ridges laid east and west, and once in a Month let these be broken and thrown up again with a new Surface. The strong Vapour of the Manure will thus be thrown off, and the Ground enriched to the utmost it is capable.

E D E N:

A

COMPLEAT BODY of GARDENING.

NUMBER XI.

For the Second Week in *NOVEMBER*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. SHORT THICK-LEAV'D ALOE.

Nov. **T**HE Aloe we last recommended to the
Pl. XI. Attention of our Reader, was distinguished by its noble Aspect and
Fig. 1. numerous Flowers. This claims an equal Regard, but from another Source; its elegant Simplicity.

COMMELINE calls it, *Aloe Africana brevissimo crassissimoque folio flore viridi*. Others, *Aloe foliis rhomboidalibus*; and *Aloe retusa*. LINNÆUS, more accurate than all in his specifick Names, *Aloe floribus sessilibus triquetris bilabiatis labio inferiore revoluto*: Aloe with sessile and three square Flowers formed into two Lips, the under one turning back.

It is a smaller Plant than most of the Aloe Kind; but never fails to attract the Eye, even of those unaccustomed to such Objects, when placed among the most rich and glaring.

The Root is composed of numerous brown Fibres.

The Leaves spring in a Cluster from its Head, and raise themselves partly upright. They are short, extremely thick, sharp pointed, and turning down with a large thick End, appear there triangular.

Their Colour is a very fine green, striped in a regular and elegant Manner with white, and they are frequently tip'd with a beautiful red at the Point.

Numb. XI.

This Variety of Colour added to the Singularity in Form of the Leaves, renders the Plant very pleasing when no more appears; but its Flowers, when the Season and right Culture call them forth, answer to them very well in Beauty.

The Stalk which supports these rises in the Centre of the Leaves, and is eight Inches high, round, smooth, and in Colour purplish.

The Flowers are neither numerous nor specious; but they appear sometimes prettily vein'd, and at others elegantly simple.

When the Culture has been least judicious, if the Plant happens to shew its Flowers, they are of a faint green.

This explains COMMELINE's Name: That Author had never brought it to flower under his own Care, tho' long possessed of it in Root and Leaves. He found an Account of the Flowers among the Papers of Mynheer WITSEN, with whom it had produced them weakly, and consequently they were described green.

In better Culture they often appear elegantly striped with green and white; and where the Plant succeeds best they are perfectly white. Thus TILLI produced them at *Pisa*; and thus we shall instruct the Gardener to bring them forwards in *England*.

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E D E N:

A

COMPLEAT BODY of GARDENING.

N U M B E R X I.

For the Second Week in *N O V E M B E R*.

S E C T I O N I.

F L O R A, or the P L E A S U R E - G A R D E N.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. SHORT THICK-LEAV'D A L O E.

Nov.

Pl. XI.
Fig. 1.

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Nov.

Nov. gular Spike. Sometimes they grow close to the Stalk, as LINNÆUS expresses them; sometimes each has its separate slender Pedicle: These are usually very short, but sometimes a little longer; and they are always of the Colour of that Part of the Stalk from whence they rise.

The Flower, examined with a curious Eye, is found to be tubular toward the Base, and expanded at the Mouth: it is marked obscurely with three Ridges in the tubular Part, and divided in an irregular Manner at the Opening into two Lips: the lower one of these always rolls back; and usually all the Segments do more or less the same.

The Flower has no Cup, but adheres naked to the Stalk; and within stand six Filaments, each crowned with an oblong Button; with a single Style in their Centre, terminated by a three parted Top, or Stigma.

When the Filaments are traced to their Bottoms, they will be found inserted on the Receptacle. This is a Singularity in a Flower formed of one Petal, and abundantly distinguishes the Aloe Kind from all others.

The Class and Place in the LINNÆAN System are seen so obviously in this Flower we need but name them. The sixth Class in the Method of that Author comprehends those Plants which have six regular Filaments in the Flower; and this is one of them.

Its single Style determines it also to the first Section of that Class, and the Student wants not our Assistance in determining it to be one of the Hexandria Monogynia.

It is singular in this Aloe that it has not the bitter resinous Juice with which the Leaves of most others abound. When a Leaf is cut what runs from it is watery, colourless, and perfectly insipid.

Culture of the THICK-LEAV'D ALOE.

We have observed this Species often loses half its Beauty by an injudicious Management.

We see in the Article of its Juice, how much it differs from the common Aloes; and every Thing we know concerning it declares the same Singularity: yet the Gardener, because it is an Aloe supposes it must be used like the Rest; and gives it the same Culture.

What this is all may know; for there is but one Source whence it is taken; the Gardeners Dictionary; compiled as the Title says, (notwithstanding all its Greek) by Mr. PHILIP MILLER. The Authors from whom that Work is principally collected, knew little of the Culture of Exotics; therefore what could be compiled from them, though vouched by the Testimony of 'em all (for all copied one another) must have been very deficient; and what is added little assists in the Instruction.

The Soil in which the Aloes thrive best, that Book informs the Reader, is two fourths light Earth; and Sand, and Lime Rubbish, of each one fourth.

This is directed equally for all the Aloes; and this the Gardeners therefore suppose that Reason

and Experience declare the best and fittest for the Plant there described.

We shall convince them that both declare otherwise.

The Plant, tho' a Species of the Aloe, is singular in its Nature, Qualities, and original Soil; and what favours the others will starve it.

Most of the Aloe Kind live naturally in a loose, dry Earth; but this on the contrary is never found wild in its native Climate, but on Clay.

This all who know the Plant declare *.

This is the proper Direction for its Soil with us; for it will be in vain we mimick the Heat of its Climate, if we ignorantly commit it to an improper Mould.

This is the true Foundation for the Culture of Plants; and we must, for the publick Utility, remind the Proprietors of the Work just nam'd, who are now giving a new Edition, that it would have become their Author, whosoever he is, in this Instance, to have kept his Promise of treating those Species distinctly, which require a particular Culture; and that we hope he will regard it better in succeeding Articles.

After this unwilling but necessary Censure on a Work intended to be useful, we shall be understood not to direct a different Management of this Plant from Inexperience and Error (because it contradicts what is there given) but from the Dictates of Reason and Authority of Trial.

To imitate the natural Soil, let the Gardener seek for a firm loamy Earth under the Turf, in some Pasture which lies on the Descent of a Hill. He will usually find it of a yellowish brown Colour, and covered with an Inch or two of Mould.

Let him pare off the Turf, and this light Covering which has arisen from the rotted Leaves of Grass, and the Dung used as Manure.

Let him take Home a Barrow full of the clean Loam, and mix with it a Quarter of a Pound of Salt and a Peck of stiff Marle.

Let these be put together early in Spring, and they will be ready for Use by Midsummer.

The Marle will have sufficiently opened the Body of the Loam by this Time, and the Season will be come for propagating the Plant.

This is very easy, for the Aloe is so full of Life that every Leaf will grow.

Let therefore half a dozen of the freshest and finest of the Leaves be taken from the lower Part of some flourishing Plant. Let these be laid on a Shelf in any Room three Days, and they will be then fit to set.

Fill as many middle-sized Pots with the Compost. Set one Leaf in each, with the Part where it adhered to the old Plant downwards, and cover it up half the Height with the Mould.

Give it a very gentle Watering.

Set the Pots in a Bark Bed of a moderate Heat, and shade them from the Sun.

Every other Evening give them a gentle Water, and in the Middle of the Day admit some Air by raising the Glasses.

Thus they will root; and in this Manner they will

Nov.

* Habitat
in Africa
Argillofr.
L. Sp. pl.
322.

Nov. will be raised, like Cuttings of other Plants, to their Perfection.

The Care and Mangement of them after this, must be exactly the same as that of the other *African Aloe* already directed, only that they must have oftener Water; and that the Gardener must carefully watch the Time of their first Shoot for flowering.

When this appears, they must be water'd twice a Day, a very little at a Time; and have more

Warmth than before.

This Management will bring on the flowering Stalks; and whether the Flowers be perfectly White, or slightly striped with Green, they will be very beautiful.

It will flower annually thus, and there will never be more Greenness in the Flower, than one, or at the most two delicate Streaks of it on each Division.

Nov.

2. LONG FRUITED TRICHOSANTHES.

Pl. XI. This is a Plant which Singularity and Beauty
Fig. 2. equally recommend to the Attention of the curious; which is easily raised; and which is yet uncommon in our Collections. We hope to render it an Ornament to them all.

It has been referred by some to the Class of Gourds; and others have distinguished it by the Name *Anguina*.

LINNÆUS places it under a separate Head. From the hairy Filaments, which fringe the Edges of the Flower, he calls it *Trichosanthes*; and for the Distinction of the Species adds, *pomis teretibus oblongis incurvis*. *Trichosanthes* with long, rounded and crooked Fruit.

The first Knowledge *Europe* had of this Plant, she owed to *Michael Angelo Tilli*; that experienced Cultivator of Exotics, received the Seeds from the celebrated *Bonaroti*, into whose Hands they came from *China*.

Tilli committed them to a rich Soil, under such Advantages of Warmth, as he had found raise others from that Climate, and he was surprized to see a Plant spring from them, not only unknown in *Europe*, but unlike all that had ever been seen there.

Various Stalks spread every where upon the Ground from a fibrous Root.

On these appeared Leaves of an elegant Form, not unlike those of the Vine, broad and divided deeply; and rudely indented on the Edges of those larger Segments; fixed on long foot Stalks; and of a shining Green.

The Flowers rose from the same Joints with the Leaves, supported on extremely long and slender Pedicles, one Flower on each.

This in the Bud seemed closed inexplicably, by innumerable branched Hairs; but the Noon Sun of a favourable Day opening it, it spread to the full Extent; large, white as Snow, and fringed with these fine Fibres.

The Fruit succeeded extremely long, slender, and often, but not always crooked. In Colour, at first Green variegated with White, and spotted with a dusky Purple; but afterwards Purplish, and then Yellowish entirely.

Thus it has gradually displayed its several Beauties also under an *English* Culture, and when overspread with Flowers, and loaded with young Fruit, it makes an Appearance elegant

in the highest Degree, and singular.

The Flower submitted to the Eye of Science, is found to be placed in a long and slender Cup, tubular from the Stalk, and opening at the Rim into five Segments. One Petal forms the Body of the Flower; and this is divided also deeply into five oval pointed Segments, edged with innumerable long and branched Hairs. Thus far all the Flowers upon the Plant are alike: but it may chance that in this first picked for Observation, the Student may perceive three Filaments most singularly covered with a creeping Line of the Farina or impregnating Dust; and three useless little Styles rising from the tubular Part of the Cup.

This may be what he finds, for it may be a Male-Flower he had opened: But if it be a Female, he will perceive nothing more than the Rudiment of the succeeding Fruit with its proper Appendages for receiving and conveying down the Dust. He will find under the Receptacle, a long and slender Rudiment of the Fruit; and from this a single Style rising, terminated by three gaping oblong Stigmata.

If it should happen that he opened one of these Flowers, he would see at once the Deficiency of the Male Parts. These he would therefore seek in some other.

This Search would soon discover to him, that the *Trichosanthes* was one of those Plants which have separate Male and Female Flowers upon the same Plant. These constitute a Class, the twenty-first in the LINNÆAN System, its Name *Monœcia*, and to this therefore the Plant belongs. There are of this Class, some whose Male Parts growing together, as in the *Syngenesia*, form a separate Section under that general Head. In this he will observe that the three Filaments which are very short, are placed at the Summit of the Cup; and he will find the *Anthera*, a Cyndric Body covered with the farinaceous Line. This shews the *Trichosanthes* one of the Section just named, and he will declare it one of the *Monœcia Syngenesia* of LINNÆUS. No Seeds follow the Male Flowers, but after the Female there comes the Fruit described before, which slowly advances to its Maturity; and as it ripens changes from Day to Day its Colour: but it is handsomest while young.

Culture

Nov.

Culture of the TRICHOSANTHES.

In *China* this is a very common Plant near Woods, and where there is a deep and mellow Soil. This we must give it here, and with this, suiting the Degree of Warmth and Moisture, we shall not fail of raising it to full Perfection. To imitate its natural Soil, let the following Compost be made: Pare off the Turf with three Inches of the upper Mould from a rich Piece of Pasture, and then dig away two Barrows of the Soil underneath, cutting it one Spade depth.

A rich Pasture being chosen for the Spot, this is a fresh and unexhausted Earth, for the Roots of the Grass have scarce penetrated to it. With this mix a Barrow of the Dung from an old Melon-bed, and the same Quantity of Earth from under a Wood-pile. Lay these together in Autumn, and let them lie all Winter, frequently turning the Heap.

Early in Spring fill two or three large Pots with this Earth broke fine, and lay on the Surface in each Pot, half a dozen of the Seeds. Sift over them a Quarter of an Inch Thickness of the same Mould, and give them a little Water.

Set the Pots up to the Rim in a Bark Bed, and shade them from the Sun. Nov.

When the Plants appear, water them gently every Night, and give them Air in the middle of the Day. Observe the strongest Plant that grows near the middle of the Pot, and mark that for remaining.

The rest at Times take up, and either destroy or plant them in other Pots; but they will never be like the original unremoved ones.

As these encrease in Size they must be more watered, and have more Air; and after they have acquired as much Strength as can be given them in the Bed; they must be set out in the middle of a hot Day, and refreshed at Times with Water. Thus they may stand among the Exoticks, so long as the Weather is perfectly warm and fine; but as they cannot bear Cold, they must early be taken into Shelter. They will come into Flower in the End of Summer; and the Fruit will appear in Autumn, and continue with fresh Flowers in other Parts for several Months.

One or more of the Fruits must be suffered to ripen for Seed, for the Root perishes when they are come to their Maturity; and it will rise very well from Seeds ripen'd here.

3. GREAT SNAP-DRAGON.

Pl. XI. We treat here of a Plant, which though not a Native of our Country, bears the free Air perfectly well in it; and sows itself freely like a wild Weed. Its Beauty when well managed is greater than they are aware, who have only seen it in the Hands of common Gardeners; and its long Continuance in Flower, under a just Management, add to its Recommendations.

Our Gardeners are well enough acquainted with the Plant, they call it Snap-Dragon and Calf's-Snout. The common Writers call it *Antirrhinum majus*; and LINNÆUS, *Antirrhinum Corollis ecaudatis Calycibus rotundatis*. Snap-Dragon with Flowers without Spurs in rounded Cups. The having no Spur to the Flower, distinguishes it from the *Linaria* kind; which this Author ranges in the same Genus with the *Antirrhinum*; and the rounded Form of the Cup; from the other kind, whose Cup is longer than the Flower.

The Root is long, thick, and hung with many Fibres.

The Stalks rise from it in a great Cluster, ten, twelve, or more together when well managed, and they are two Feet high.

The Leaves on these are long and slender, undivided, and of a shining Green.

The Flowers are large, and they are conspicuous from their standing in long Spikes; they are long, hollow and close at the Mouth, and are naturally of a fine Red; sometimes they will

be deeper, sometimes paler, and in some Plants of a perfect White.

They will also take Tinges of other Colours, and will be striped and variegated from good Culture; in these Cases the Number and Variety of the Flowers greatly recommend them, and with the Culture we shall propose, they are worthy of a Place in any Garden.

The Flower examined with a Botanical Attention, appears form'd of a single Petal, and of the labiated Structure. The short Cup in which it stands, is divided into five Segments, of which the two lowest gape more than the others.

The tubular Part of the Flower, is long, thick, and uneven; and the two Lips are united by a transverse Piece, which closes the Mouth of the Flower. This is called the *Palate*; both Lips are divided at the Edges, and the *Palate* is convex, and stands prominent between them. At the Base of the Flower, is a Nectarium, which is short, rounded, and scarce prominent. In the center of the Flower, when laid open, appear four Filaments. These are nearly of the Length of the Flower; and they are placed under the upper Lip, and terminated by their Buttons. On examining them attentively, they will be found of unequal Length, two exceeding the others.

The Style rises single among these, and the Seed Vessel is rounded, and opens obliquely at Top when ripe.

Nov. The Difference in Length between two of the Filaments, and the others, is an Observation of Importance, for on that depends the Class of the Plant.

We have already told our Student, where two of these are longer than the others; the Class is that of *Didynamia*, thence named: and this having a Capsule for the Seeds, is one of that Section under this Class, distinguished, from the Capsule, by the Term *Angiospermia*.

Culture of the SNAP-DRAGON.

The Gardener will smile to hear us speak of instructing him in the Culture of a Plant, that will live on an old Wall, and propagate itself from Year to Year without his Care: But we are about to tell him, how he shall make it exceed in Lustre, not only what he thus sees wild, but all that his Fellow Gardeners raise by their best Culture.

It is to be done thus. In the Month of *November* let him make this Compost; two Barrows of Earth from a rich Pasture, one of Marle, and one and a half of River-Mud; to these, when he has stirred them well together, he is to add a Bushel of Hog's Dung, and a Bushel and half of Cow Dung.

These let him work well together, and lay them in a Ridge, stirring them once a Month till Spring.

Let him gather some of the Seed from a tall and thriving Plant, which has grown in its own wild Way upon a Wall, and lay it carefully in the Pods till *Christmas*: it will thus gradually dry and harden.

Then let him carefully shake it out upon some Sheets of Cartridge Paper, and leave it exposed to the dry Air till wanted.

This compleats the drying and hardening, which in all Flower Seeds is an essential Article.

Early in Spring, let the whole Compost be laid in some Part of a warm Border, open to the Sun, but sheltered from the Winds; and let the Earth of the Border be taken out, a Spade and half deep, to give it Room.

Lay the Surface level, scatter over it the Seeds thinly: And sift upon them a quarter of an Inch of the same Compost.

Throw some Furze Bushes upon the Bed, and on these lay a-piece of Matting.

Nov. Let this be supported a Foot and a half above the Level of the Bed, and every Day at Noon raised at the Edges, unless the Weather be very bad, or the Winds sharp and cold.

The Plants will thus come up, and the Furzes must then be removed: where they rise very thick, they must be thinned by pulling up a few, leaving the strongest.

This always should be done in the middle of a fine Day, at the same Time that the Furzes are taken away; and there must then be put some Hoops, but not too high, to support the Mat that covers the Plants: Thus they will get more Air; and yet be defended from the Cold.

This Care is to be continued till the Weather becomes warmer.

The Plants will by that Time have got a considerable Height, and they must be marked for Standing or Removal.

First let a couple of large Pots be brought: let some of the Compost be taken from the Outside, and put in them; then let two of the stoutest Plants be raised with a great Quantity of the Soil, and set upright, one in each Pot, filling it up with more:

Let these have a gentle Watering; and set them in the Places where the Plants grew, to be shaded till they have Root.

Two being taken for this Purpose; observe where the best of the others grow; set a Stick by way of Mark, at each of these, leaving as many as can stand at a fair Distance on the Bed. Take up all the rest carefully, and plant them out in other Parts of the Garden.

These are to take their Chance, and they will be little better than the common ones.

When those in the Pots have taken good Root, let them be set among the Exotics in the open Air; and let these, and those in the Bed, be water'd, as Occasion requires, in common with the other Plants: no otherwise.

In Autumn they will flower: those in the Bed of Compost will be fairest and fullest of Bloom. Those in the Pots are intended to be hous'd late in Autumn with the Exotics, for the Sake of continuing the longer in flower. I have thus kept them blowing all the fore Part of the Winter.

Those who think this Care more than the Snap-Dragon deserves, have not seen it fairly. When rais'd by this Care, it exceeds many of the most pompous Flowers,

4. AMERICAN EUONYMUS.

Pl XI. Fig. 4. The Reader will be, perhaps, surpriz'd to hear, we mean by this Name what he has been us'd to call *Virginian Myrtle Sumach*. By such wretched, ignorant, and improper Names, have the Gardeners been taught to know their Plants; by those who on the Knowledge they can glean from PARKINSON or GERARD, set themselves up as Oracles to their Brethren.

Nº. II.

The Name is old in *England*; for COMMELINE makes his Acknowledgments to the Bishop of London of that Time, HENRY COMPTON, from whom the *Amsterdam* Garden receiv'd it; with the Name of *Virginian Myrtle Sumach*: but however early were the Error, there have been since Means sufficient to abolish it; tho' the Term is still continued.

K k

COMME,

Nov. COMMELINE, just nam'd, alone retains the Name of *Rhus* to it, adding *Virginianum foliis Myrti*¹; but this he did not from an Error in his Judgment, supposing it a Species of *Rhus*, or *Sumach*, but in Complaisance to the *Donor*; *Botanicorum*, as he calls him *Dux & Princeps*.

PLUKENET had given it its right Name, *Euonymus*².

LINNÆUS, in his earlier Writings, call'd it a *Celastrus*³; but, in his later⁴, he has refer'd it to the true Class; and in this GRONOVIVS follows him⁵. This Generical Name admitted an easy Distinction for a specific one: he adds to this Purpose, *floribus omnibus quinquefidis*: *Euonymus*, with all the Flowers divided into five Parts: this evidently distinguishing it from the *European* Kind; the Divisions of whose Flowers are for the most Part four.

There is also this farther Reason against continuing to it the Name *Rhus Myrtifolia*, that it is given to two other Plants; the one a *Myrica*⁶, and the other a *Coriaria*⁷. We have annexed the References in the Margin, to clear this intricate Point of Confusion.

It is not one of the most specious Shrubs we take into our Gardens; but they must have cold Imaginations who talk of it as wholly wanting Beauty. The Flowers have no Claim to Attention; but the Leaves are very pretty both in Form and Arrangement. They never fail to attract the Eye among even the finest Kinds; and 'tis the more valuable, as that it lives thro' our Winters.

The Root is fibrous.

The Stem is woody, but not strong, and is covered with an Olive-colour'd Bark, when the Plant has full Health. From this spread Branches wildly and irregularly, whose young Twigs are greener.

The Leaves resemble those of the *Italian Myrtle*, and they are dispos'd with a beautiful Regularity.

Their Colour also is a Recommendation; for it is a very bright and lively green.

The Flowers are plac'd singly, or in Pairs, on

short Pedicles, rising from the Bosoms of the Nov. Leaves. They are small, and of a yellowish green Colour, ting'd with a faint Purple in some Places on the upper Side, and more on the lower; and after these comes a small square rough Fruit.

The Flower, examined by the Eye of Science, is seen plac'd in a small Cup, cut into five small hollow Segments; and its Body is form'd of five small oval Petals. In the Centre are plac'd five small Filaments; and in the Midst of them a single Style.

The Class to which the Plant belongs, is easily known from this: it is the *Pentandria*, the Fifth in the LINNÆAN System; and the single Style shews it to be one of the *Monogynia*, those of the first Section.

Culture of the AMERICAN EUONYMUS.

The best Way of raising this Shrub is from Seed; but that should be had from its native Country, *Virginia*. When this cannot be obtain'd, 'tis better to lay some Branches, than to trust to Seeds ripen'd here, for that is often done imperfectly.

To this Purpose, let the Earth be open'd round about a Shrub of this Kind, and several Branches be brought down to it by bending.

Let the Place be mark'd where they touch the Earth, and several Slits be made quite thro' them with a sharp Penknife: just above the Place twist a Wire moderately tight; and then cut off the Branch ten Inches above the Place where it is slit.

This done, prepare some Pegs, and lay the Branches, one by one, in the Ground, three Inches deep. Peg them down: water them at Times, and they will succeed very happily.

In one Season they will have shot good Roots; and they may then be cut from the Mother Plant and set as new Shrubs.

There are some who pot this Shrub, and bestow more Care upon it: but it succeeds thus very well.

5. STRIPED AMARYLLIS.

Pl. XI.
Fig. 5.

We have laid before the Reader already one elegant Species of *Amaryllis*; this deserves very well a Place with it; and tho' less glorious in the Colour, makes amends by a most pleasing and regular Variegation. It is also, in its Kind, an extremely stately Plant.

'Tis but of late we are acquainted with a proper Assortment and Distribution of the Bulbous Flowers; and, till this was done, the proper and distinctive Names could not be assign'd to them.

This was call'd a *Lillio-narcissus*. So COMMELINE and others entitl'd it, in common with more Plants of different Kinds, from a suppos'd Resemblance in Part with the Daffodil, and partly with the Lilly.

LINNÆUS establish'd the Distinctions of the Genera, and call'd this *Amaryllis*; adding, as its Distinction from the other Species, *spatha multi-*

flora corollis campanulatis aequalibus, scapo tereti ancipite: *Amaryllis*, with a roundish two-edg'd Stalk, and with numerous equal campanulated Flowers from the same Scabbard.

VAN ROYEN calls it by the same Name, and it would not be easy to frame another equally expressive.

The Root is an oblong Bulb, of a white Colour; and from its Bottom sends out a Multitude of white and downy Fibres.

The Leaves are large, and of a fine green; they are very long, moderately broad, and hollow'd from the Centre.

The Stalk rises not in the Midst of this Tuft of Leaves, but at their Side; and it is roundish, but double-edg'd, firm, upright, juicy; and in Colour purplish.

Its



Short thick leaved Aloe



Long fruited Trichosanthes



Great Sinapistrigon



American Euonymus



Striped Amaryllis



Vitis

Nov.

Its Height is two Foot and a half; and at its Top stands, at the first Appearance, a great Bud, which afterwards bursting discloses six or eight noble and erect Flowers.

The Scabbard which had furrounded them as a general Cup in the Bud, divides to give them Passage, and hangs in purplish Fragments from the Top of the main Stalk, where the Flowers take their Origin.

These are supported on so many slender Footstalks, and each is large, beautifully form'd of six pointed Petals, and of a snowy white on the Inside: their Outside is of a less glittering white, and is streak'd along with Purple: sometimes there runs only one Line of this upon the several Petals; sometimes there are more; but the others are always fainter than this in the Centre: and the Tips of the Segments are, on their under Side, often purplish.

The Seed-vessel succeeding each, is oval, and contains, in three Cells, a Number of large Seeds.

The Colour of the Leaves, and the bold and noble Aspect of the Bunch of Flowers, give this Plant a magnificent Beauty to the Eye; but it demands Attention on another Account; the Fragrance is very delightful and very singular: those who recollect the delicate Perfume of the *Lilly of the Valley*, will be able to form an Idea of the Scent of these Flowers: the Smell is of the same Kind, but much more exalted.

The Student who examines the Flower in the Respect of Science, finds it to contain, in the Midst of its six Petals, as many Filaments, crown'd each with its oblong Anthera; and in the Centre of them a single Style, with its Top divided into three Parts. This shews the Plant to be one of the Sixth Class in the LINNÆAN System, and of the first Section, the *Hexandria Monogynia*.

It bears some general Resemblance to the *Pancratium* before describ'd; but differs, in that it has not the singular Nectarium of that Flower, from the Edges of which the Filaments rise, and into which the Petals are inserted.

Culture of the STRIPED AMARYLLIS.

Nov.

Experience shews there are not any two of the Exotic Bulbs which require exactly the same Culture, or the same Soil. This is a Native of the Island of *Ceylon*, and there, lives in the lower Grounds, where it has a deep and mellow Earth, and some Degree of Shelter.

The Compost I have found best agree with it, for we have no simple Earth that is fit, is this:

Mix two Bushels of River-Mud, one Bushel of Wood-Pile Earth, and half a Bushel of Cow-dung. Let this be put together in Spring, and it will be ready by the Time it is wanted.

The proper Way of raising the Plant is from the Bulbs; and to have it in the full Perfection, these should be brought from *Ceylon*.

They may be taken up with Care at the Time of the Leaves fading, and kept out of the Ground two Months: after which they should be planted in a Pot of light Earth, and they will thus come over in good Condition.

When they are receiv'd here, they should be carefully clean'd, and planted each in a separate Pot of the Compost thus prepar'd for them; raising the Surface of the Mould one Inch above the Top of the Root.

When thus planted, they must have a little Water, and be set in a Bark-Bed of very moderate Heat: here they will thoroughly root themselves, and they are thence to be remov'd into the Stove, where they will flower, with good Management, in all the Lustre they have in their native Country.

The principal Care is to pick away dead Leaves; to stir the Earth now and then at the Top of the Pot; and to water them frequently, a little at a Time, with Water which has stood in the Stove long enough to be of the same Temperature.

Less Heat will keep them alive; and a less careful Management sometimes bring them to flowering: but with this they will be surprisngly better than when they have been treated more slightly.

6. The VITEX.

Pl. XI.
fig. 6.

The Shrub we here propose to the Reader's Attention is well known; and celebrated for many strange Qualities: of these there will be found a poor Account upon Authority; but we recommend it for its Singularity, the pleasing Disposition of its Leaves, and its easy Culture.

The common Writers call it the *Chaste Tree*, and in *Latin*, *Agnus Castus*, Names form'd upon its suppos'd Qualities. Others call it *Vitex*, and *Vitex foliis Cannabis modo dispositis*.

LINNÆUS, *Vitex foliis digitatis spicis verticillatis*: *Vitex*, with finger'd Leaves, and verticillate Spikes.

It a Shrub of five Foot high; and may be rais'd to more Height if desir'd. The Bark is brown on

the Trunk, paler on the Branches, and the Twigs are long and slender.

The Leaves grow many together on the same Foot-stalk, and they are dispos'd in the Manner of Fingers upon a Hand, rising from one Point, or nearly so; and they are narrow and of a dusky green.

The Flowers are small and inconsiderable, singly; but being of a pale Purple, they have a pretty Effect as they stand in the Spikes. These terminate the Branches; and are long, slender, and interrupted at little Distances; not uniformly continued the whole Course.

The Fruit which succeeds, is small and roundish,

Nov. roundish, and it resembles a Corn of Pepper; hence the *French* call the Shrub *Poivrier*; and some in *Latin*, from the Shape and alledg'd Effect of the Seed-vessel, *Piper Eunuchorum*. Each of these Vessels contains one Seed.

The small Flower, carefully examined, is found of a singular Structure. The Cup in which it is plac'd is very small, form'd of a single Piece, and dented in five Places at the Rim.

The Body of the Flower consists of a single Petal, which is tubular at the Base, and in the upper Part divides into two Parts in the labiated Manner.

The upper Lip is divided into three Segments, of which the two side ones are narrow, and the middle one broader.

The lower Lip is also parted into three Segments, and of these the middle one is considerably bigger than the others.

From the Centre of the Flower rise four Filaments, on which there are so many Buttons. Of these there are two longer than the others; and this declares the Class to which the Plant belongs, the *Didynamia*. The Capsule containing the Seed, shews that it also belongs to the *Angiospermia*: those of the other, having, according to their Name *Gymnospermia*, the Seeds naked in the Cup.

The Accounts given us by the revered and celebrated Antients, of the Virtues of this Shrub, have preserved its Name through all the intermediate Ages. They celebrate it as a Preservative of Chastity: the venerable Names of *Dioscorides* and

Pliny, *Theophrastus*, and others, stand to authenticate this imaginary Quality; and the *Athenian* Matrons lay upon Beds of its Leaves, while they celebrated the chaste Rites of *Ceres*. To all that has been said upon this Subject, Reason answers, Diseases of the Mind find little Aid from Medicine.

Culture of the VITEX.

The Shrub is so common, that good Cuttings may always be had, and there is no better way of propagating it.

These succeed best in Spring.

Let them be taken from a healthy Plant, and set in a Border of mellow Earth, well shaded.

From Time to Time water them gently, and in the Summer keep them clear from Weeds.

At Autumn break the Ground well between them, and sift on half an Inch more of good Mould; then shelter them by a Reed-Hedge, if the Place be expos'd to cold Winds; and let them take their Chance the Winter.

In the succeeding Spring they must be planted out; and they will then require no more Care than is bestow'd upon all other Shrubs which bear the open Air.

They must be prun'd of their irregular Branches, and train'd to a proper Head; and tho' they will grow taller, they are never so handsome as at the Height of five or six Foot. After this they will flower every Autumn.

C H A P. II.

The Care and Management of the Flower-Garden for this Week.

WE have from Week to Week of the late past Time, reminded the Gardener how to get into the Ground those Perennial Flowers, whose Lustre he shall want to decorate his Borders and Plantations the succeeding Summer. We now give him the last Admonition on that Head.

Whatever Spot there be that can advantageously receive any of the Roots, let them now be put in without farther Loss of Time, for after this Week there can be no more of such Plantation: whatever is omitted longer must be deferr'd till Spring; and those which are then planted will make a poor Appearance the succeeding Summer, compar'd with such as have stood the Winter.

'Tis not every Perennial that will succeed when planted so near the Frosts; but from Experience we have found the following Kinds will not fail: The best Sorts of *Wall-flowers*, the *Eryngium*, some of the *Golden Rods*, with the *London Pride*, the *Thrift*, and *Polyanthus*; some of the *Lychnis*, and the *Flag Iris's*.

Of the Shrub-Kind it will be proper to introduce at the same Time, where needful, the *Hyper-*

cum, or shrubby *St. John's-wort*, the *Spiraea*, and some *Roses*.

The Ground must be very carefully prepar'd, by a thorough Breaking, to receive them; and they must have but little Water; this must be given them about Nine in the Morning, that the Earth may heat afterwards as the Day advances: and with this ends the Business of Plantation in the Flower-Garden, till the ensuing Spring.

Whatever Deficiency be left now, must stand unsupply'd till then; and if the Ground be wet in its Nature, it will be too late to do it now.

The Fear is, that Frosts should harden the Earth before these late Plantations can take Root; and this is more likely in wet Soils, the Frost having in such most Power.

This Week let the careful Gardener put together some Compost in good Quantity, for the supplying and amending the Borders of his Flower-Garden in general.

We have deliver'd many different Receipts for suiting these artificial Soils to particular Plants, but those are principally intended for Pots, for the

Nov. the raising tender Exoticks. There is such a Thing as a general Compost, which being of a middle Nature between the several Kinds, will suit the Generality of Plants; and will be better than almost any Thing which can offer naturally. For this Use, the best Mixture I have experienced, and I have tried many, is the following.

Cut up a Load of Earth from under the Turf, in some exposed Place by a Road-side, or elsewhere, where there has been no great Growth of Weeds, and where Cattle have frequently lain.

Pare off the Turf three Inches thick, and cut for your Use, the good Soil one Spade Depth below it.

Let this be taken up in a Place where the Ground is naturally good, and it will be a kind of Virgin Earth.

The Roots of the Grass have scarce at all penetrated it, and it is enriched by the Urine and Perspiration of the Cattle, and with the richest Part of their Dung washed in by Rains.

To one Load of this, add half a Load of Wood-pile Earth, three quarters of a Load of River-mud, and half a Load of Marle: set the Turf in a high Heap, which was cut off the Ground; and putting some dry Furze Bushes under it, set them on Fire. Burn the Turf, not to Ashes, but till it comes to a Heap of crumbly reddish Matter. Bring in this and put to the rest.

Let all these be perfectly well mixed together, and laid in a Heap, sprinkling them at first with four or five Pots of Water, and afterwards leaving them to the Effect of Rain and Frost.

Once in a Month the whole Heap is to be turned, and when it has lain the Winter it is to be screened for the Service of the Borders.

The manner of screening, we shall direct when we treat of that Season. This is all that is to be done at present, and this will produce a Compost, rich without Dung; and such, as if

Nov. duly wrought, by good digging and breaking, will feed all the common kind of Garden Flowers luxuriantly for their useful Parts, without making them rank in Leaves.

It will also raise many of the most choice Flowers.

Plants will live in it longer, and endure the Winter always better than in dunged Soils; and they will in general ripen their Seeds more perfectly.

Many employ more Time and Trouble on their Composts, who succeed much worse: This we recommend from frequent successful Trials.

In Places where Marle cannot be had, the Quantity of what is ordered here, must be made up, half with Wood Pile Earth, and half with Pond Mud, and about half a Peck of Stone Lime must be added. This we have found very well supply the Deficiency.

We have recommended to the Gardener, the following the Practice of the *Dutch* and *French*, in raising all bulbous Flowers from Seed.

A Succession of these must be sown in moveable Boxes of fine Earth, as we have directed, and shall farther explain at the Season.

They must now be removed into a warm Place, where they may be sheltered from Winds, and enjoy the full Benefit of the Winter's Sun: They must be looked over carefully, that no Weeds be suffered to rise among them, nor Moss to appear on the Edges.

This Care will keep them in all the Strength required for their slow Progress at the present Season, and they will advance in their gradual Way to Perfection.

This Care being taken of the Seedling Bulbs, let the Gardener see that none of his valuable potted Flowers are left exposed, but that his Carnations are under Hoops and Mats, and his Auricula's on their covered Stand. That done, he may for the present Week leave this Part of the Ground.

S E C T. II.

The Business of the SEMINARY, for the present Week.

THE Growths of the Nursery are to be in the same Manner protected from the Frosts of the succeeding Months, as the Products of the Flower-Garden; though in a different Degree.

When there are Beds of Seedling Shrubs, or of perennial Flowers of a somewhat tender Nature, they must be defended from the ensuing Rains and Frosts.

The best Method is by Hoops and Mats, or Cloths. Only let the Gardener remember this is a Place where Things are raised for Hardiness; and therefore while he preserves them alive, let him take Care he does not make them too tender. Let the Hoops that defend these Beds stand high, N^o. II.

and the Mats never be drawn over them, but in very bad Weather; and even in the worst, let them have some Air at those Hours when it is well warmed by the Sun.

This is the Practice which best suits those Seedlings that have some Height; and it may be used also to Cuttings of the tenderer Kinds that are set in this Part of the Ground.

For those Beds in which the Plants are but shooting, or have very little Height, the best Defence is a sprinkling of long dry Straw, which must be taken off again when the Weather is better.

Nov. There will be also in the Seminary some potted Trees. These are mostly Exoticks, which coming from moderate Climates bear our Air in Winter; though they require some Care.

What should be done with the more tender Kinds has been said already; they are in the Green-house or the Stove at this Time: and some Care must be taken of these. The best is this.

Throw down a dozen Barrows of Sand upon some dry Piece of the Seminary: dig this in; work it well with the rest of the Ground, and then open Trenches length-wise in it of the Depth of the Pots, and of a Length to hold them in two Rows.

Nov. These two Trenches being made at a Foot Distance (or three or more if the Number require it) set in the Pots one by one, at a Foot Distance in each Trench, fill up the Spaces between them with more Earth of the same kind, and level the Beds to the Rim of the Pots.

The Trees and Shrubs for which this Management is intended, are young, and the Danger to which they are exposed, is that of the Frost penetrating to their Roots through the Sides of the Pots.

This is a certain Method of preventing it; and they will thus live through the Winter in the open Air, and be very secure when carried into their proper Places.



S E C T. III.

P O M O N A, or, the Fruit-Garden.

C H A P. I.

Fruits yet in Season.

THE fewer the Fruits are, which continue in Season at this Time, the more valuable they become.

The Currant is a kind little regarded when there is Plenty of such as are more elegant; but a Plate of these in *November* or *December*, will be agreeable at the best Table: and there is an easy Method by which the Gardener may supply them.

Few Gardens are without a Shrub or two of this kind, nailed against a Wall; and none should be without them.

As the Fruit ripens on these, let a double Mat be nailed over the whole Part of the Wall, where the Tree spreads: let it fall over the entire Branches, and be brought pretty close at the Sides; but let it have Air at the Bottom, and in about two

Places sideways.

The Time of doing this is the middle of a dry Day, and it may be done sooner or later; but never will be out of Time, so long as there remain any Fruit upon the Trees; because those which are covered latest will last longest good.

This will prevent the Sun at Noon from withering them, and the Frosts at Night from nipping them; and thus both Red and White may be now, and for three Weeks or a Month longer, sent up to Table.

These with the several Species we have directed to be laid up for earliest Use, and the Assistance of the Nut kind, and some very late Plums, will yet set out a Desert at a tolerable Manner, or serve to fill up the Board about a Pine-Apple.



C H A P. II.

The Method of preserving Apples for the Winter's Use.

THE Variety of Kinds suit Apples to various Purposes; and they require accordingly a different Manner of Preservation.

We may divide them under two general Kinds; those intended for the Desert, and those for the Service of the Kitchen.

As to the several Kinds design'd for eating as they are, they must be gather'd with Care; and when every one that has the least Blemish is separated from among them, they must be carefully laid in a Heap, and cover'd, as we directed for Pears.

When

Nov. When they have been a few Days damp on the Surface, they should be one by one wip'd; and when any Speck or Mark of Decay is seen upon any one, it must be thrown out. Then the finest must be reserved by themselves, and the rest laid in a single Layer upon the Floor and Shelves of a dry airy Room.

From Time to Time these must be watch'd; the ripest taken up for the Table, and any decay'd ones remov'd.

In fine Weather the Windows must be open'd in the Middle of the Day; and in Rain and Frost they must be kept constantly shut. When the Frost is very severe, some dry Straw should be scattered over the Fruit.

The finest of the Apples which we ordered to

Nov. be separated from the others, should be preserved with dry Moss in Earthen Jars, as we directed for Pears; and rosin'd down. These will come in very agreeably, when the others are over.

The best Way of Keeping those Apples intended for the Kitchen, is to pile them in a Heap, as the others, and cover them with a Blanket. Under this they may sweat four or five Days longer than the finer Kinds; and being then wip'd one by one with Linnen Cloths, they must be carefully pil'd up in Heaps again.

In these they are to lie, taking off the Outside Fruit as wanted; and at all Times carefully removing any decay'd or bad ones. These also in very severe Weather should be cover'd with a little Straw.

C H A P. III.

Of the Care and Management of Fruit-Trees for this Week.

THE Business of Pruning, concerning which we gave Directions in our last Week's Number, may be still carry'd on. The Method to be us'd in Respect of the Apricot and Peach, we have already given; and the Nectarine being in nothing particular, is to be manag'd in the same Manner.

These being the most valuable Kinds, are to be prun'd first; and after they are finish'd, we shall direct the Gardener to go to his Apple and Pear-Trees. These two Kinds agree in a great Measure with one another in their Nature, but they differ widely from those we have just mention'd: this is a Point very essential for the Gardener to understand, because upon this depends entirely the Method of Pruning.

The Peach, and others of that Class, produce their Fruit naturally upon the last Year's Wood. On this depends the Method of their Pruning.

Reason directs for this Purpose, that their Branches should be shorten'd to a greater or lesser Distance from their Origin, according to their Strength, and the Vigour of the Tree; because by this Method they will produce new Shoots for the succeeding Year.

On the other Hand, it is the old Wood that yields the Pears: the five or six Years Branches yields most of all.

There rise from these a peculiar Kind of Shoots, which are short, robust, and destin'd for the Growth of the Fruit.

This plainly indicates what is to be the Method of pruning them.

They must not be shorten'd, because that Operation would make the Branches, Nature intended for shooting these Sprouts for the Fruit, fend out more Wood.

The Consequence of this would be, that the Tree would be loaded with useless Boughs; and there

would be scarce any Branches left in the Condition Nature intended for bearing.

This Method would also frequently cut away the very Parts on which Blossom Buds should have appear'd.

The Branches of Pear Trees therefore must never be shorten'd in the general Course of Pruning: but if any one happens to grow very large in an improper or irregular Place, then such a Straggler may be cut off, to the Place where it will shoot more regularly or usefully.

This would not succeed in the Peach and Nectarine Kind, for the Stump would come to nothing; but the Pear will shoot freely from the old Wood. In these Trees wherever a Branch runs cross another, the weaker of the two must be cut out.

Whenever the Branches stand too close, they must be thinn'd; for a Pear Tree that is too full of Wood will never bear well.

It is essential to these, above most other Trees, that the Branches stand free and clear of one another, that the Sun and Air may have full Passage.

All those young upright Shoots, which rise in these Trees from the Trunk, must be now cut out, for the Reason we have just given; for there could never be a free Passage of the Air, or due Distance of the Branches, where these were encourag'd.

If there be dead Wood in any Part, that must also be carefully cut out; and all this done, the Trees must be strictly examined as to the Disposition of the Branches: they should be left, for Service, at a moderate Distance, that the whole Tree, and the Fruit in every Part of it, may have the Benefit of free Air; and, for the Sake of Beauty, that Distance should be nearly equal.

The Gardener who pretends to most Knowledge

Nov. ledge, generally employs his Knife most freely: let him in these Trees employ its Use according to these Directions, or he will never succeed. When he manages otherwise, he may depend upon this Truth, That the more Cutting, the less Fruit.

The natural Place of the Pear's Blossom-Bud is the Extremity of the last Year's Shoot: now when this Shoot is shortned, the Blossom is cut off before its Appearance; and, as we have before said of this Tree, the Vigour of Nature, which would have produced afterwards Sprouts for the

Fruit on the Sides of that Branch, is exhausted, Nov. by sending out new Shoots of Wood.

There is no Need to provide for a new Supply of Wood in these Trees; for the Shoots that bear one Year, continue fruitful many; and they will, in a Manner, cover the principal Branches.

What is to be done further in the Training of these Trees for Use and Beauty, must be in Summer, and we shall give the Directions for it in their Seasons.



S E C T. IV.

CHLORIS, or the KITCHEN-GARDEN.

C H A P. I.

Products of the Kitchen-Ground now in Season.

THOUGH this is not a Season when many new Products are to come in, we shall occasionally remind the Owner of a Garden, of the principal among the better Kinds which continue.

He may now expect, in very good Order, beside the common Furniture of every Green-Stall, Cauliflowers, which, under the Management we have directed, will be fine, white, and sound. There will also be Artichokes; and the Root call'd *Jerusalem Artichoke*: *Scorzonera*, *Salsafie*, *Skir-*

ret, and *Dutch* or larger-rooted Parsley. There will also be Celeri, Chardoons, and Mushrooms, and some Hot-Bed Asparagus.

We shall deliver the Methods of bringing all these to their Perfection, as we treat occasionally of the several Seasons of planting and preserving them; and he who has so many good Products for this and the more advanced cold Seasons, will almost defy the Hand of Winter.



C H A P. II.

The Care and Management of the Ground.

WHILE the Labours of the Year are many in other Parts of the Garden at this Season, the Hands are at Liberty that should perform them, because but little is demanded here.

Let the Gardener take the Advantage of a dry Day, and open a few Trenches in some shelter'd Part of his Kitchen Ground for Pease.

Let him also plant some more Beans. They will shoot at the due Time, and lay the Foundation for a Succession.

Let him go over the Ground where his forward Crops of these two Kinds were planted, and break the Earth between the Rows, and draw it up about the Stalks. This will defend them against rocking with the Wind, and will keep the Frost from their Roots.

In good Weather let him take off the Glasses from the Cauliflower Plants; and use this Opportunity of drawing up the Earth about them, without destroying the young Salleting sown at the Edges.

As Frost is now to be expected that will harden the Ground beyond the Power of the Spade to enter, those Roots which will be requir'd for the Service of the Table, should be taken up and preserved.

Let a large Quantity of Sand be dry'd and sifted, and make a Bed of it three Inches deep, on the Floor of some dry Room. Take up the Roots of a good Quantity of *Salsafie* and *Scorzonera*, as also of the great-rooted Parsley, and having wip'd them clean, lay them carefully upon this Bed of Sand. Cover them four Inches deep with more of the same dry Sand, sifting it on, that it may fall regularly.

In the same Manner make larger and deeper Beds of Sand for Carrots, and among them lay a few Parsnips; sift over them more Sand, and scatter some dry long Straw upon the Top. Out of these Beds they are to be taken as they are wanted in the Kitchen.

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A

COMPLEAT BODY of GARDENING.

NUMBER XII.

For the Middle of *NOVEMBER*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

1. THREE-RIBB'D CEANOTHUS.

Nov.
Pl. XII.
Fig. 1.

THE Gardener recollects, that, beside those Shrubs and Plants distinguish'd by their Beauty, we recommend some for their Singularity. This is one of them: tho' were it wholly without the other Recommendation, it would not have been selected for this Purpose.

Authors have call'd it by various Names; and 'tis but of very late Time its true Place, in a regular Arrangement of Plants, was known: we owe this to LINNÆUS; but he has in his former Works, misplac'd it: that Author, in the *Cliffort* Garden, calls it a *Celastrus*; and he is follow'd in that Name by GRONOVIVS and VAN ROYEN.

COMMELINE names it an *Euonymus*; but in the *Species Plantarum*, LINNÆUS departing from his former Opinion, calls it a *Ceanothus*; adding, as a Distinction of the Species, *foliis trinerviis*: *Ceanothus*, with three-rib'd Leaves.

The Root is woody and spreading.

The Shrub rises to six or eight Foot high, and the Stem is tolerably strong.

The Bark on this is of a greyish brown, but on the young Shoots it is purplish.

The Branches spread variously and irregularly, and are full of very handsome Leaves.

These are oblong, large, and of a fine shining green. They have short reddish Foot-stalks, and they are serrated at the Edges, sharp-pointed,

Numb. XII.

and strongly mark'd with three longitudinal Ribs.

The Flowers are in nothing considerable but their Number; for they have neither Bigness, Scent, nor Colour. They stand in Clusters, and are white.

After these come small and dry three-corner'd Fruit, of a brown Colour.

The Student, to know the Place of the Shrub in the LINNÆAN System, must examine this little Flower: and he will, in that closer Observation, find enough of Singularity.

The Cup, embracing the Base of the Flower, is small, and green at the Bottom; but at the Top it spreads out into some Breadth, and is divided into five Segments, ting'd with a whitish or a reddish Colour.

The Body of the Flower is form'd of five Petals. These are very small, extremely obtuse at the End, compress'd, arch'd, and swell'd, and they have long Bases, which adhere to the Segments of the Cup.

In the Centre stand five Filaments, crown'd with roundish Buttons; and in the Midst of these rises a single Style. This shews the Place in the LINNÆAN System.

The *Pentandria*, the Fifth of that Author's Classes, receives those Genera which have five regular Threads in the Flower, and this is one of the

M m

first

Nov.

Nov. first Section under that Class, the *Monogynia*: this is learn'd from the Style being single.

Culture of the CEANOTHUS.

This Shrub ripens its Seeds with us, and may be rais'd from them. They may also be had from *North America*, where it is very common, and it will rise freely from them. This Method affords the handsomest Plants, but they are long in coming

to Perfection: we therefore recommend the Method by laying: The Branches readily take Root this Way, and there requires no particular Management.

They will be fit to take off the next Season; and after that no more is requir'd than to pot them; and, for perfect Security, to take them into the Green-house in Winter. The Leaves fall in Autumn, but they appear early in Spring.

Nov.

2. C O R Y M B O U S G R E A T S E L A G O.

Pl. XII. This is one of those Plants which doubly claim their Place in a judicious Collection, from their Singularity and from their Beauty.

It is another of those Species, whose ill-determin'd Genus, till of late, has led Authors to call it by a Variety of Names.

It is describ'd in RAY and MORTON under the inartificial Name of *Millefolio affinis Maderaspata*.

COMMELINE calls it *Campborata Africana*.

LINNAEUS, *Selago corymbo multiplici*: Selago, with a manifold Cluster of Flowers. Under this generical Name it stands also in VAN ROYEN.

Let the Botanical Student here avoid confounding Things in his Imagination.

DILLENIIUS has unluckily call'd, by this Name *Selago*, a kind of Moss. COMMELINE is not without Excuse, tho' without Reason, in calling the Shrub a *Campborata*. HERMAN had first describ'd it under that Name, and he conform'd to the Custom of the Botanists of his Time.

The Root is divided, hard, and hung with innumerable Fibres.

The Stem is woody, and divides at a small Height into a great Number of Branches. The Bark, on the larger Parts, is greyish, but on the smaller, it is of a pale green, or lightly dash'd with a reddish Brown.

The Leaves are small, but their Number very well atones their separate Bigness; and they are plac'd with a Beauty and Regularity scarce known in any other Plant. They are small, oblong, sharp-pointed, and they stand in Clusters at the Joints, like Pencils.

The Flowers, like the Leaves, are separately small, but they stand in surprisingly thick Clusters, resembling, in some Degree, the Disposition of Flowers in the *umbelliferous* Plants. They are white, and when view'd at a small Distance, each appears to have four little Spots of a gold yellow. These are indeed the Buttons terminating the Filaments; but they seem, at some Distance, plac'd on the Flower.

These lead the Student to the Class to which this singular Shrub is to be referr'd; but it is fit withal he take an exact View of the Flowers. He will find each is plac'd in its little Cup, and this is form'd of a single Piece, divided into four small Segments, of which the under one is largest.

The Body of the Flower is form'd of a single

Petal; tubular a little Way at the Base, and scarce pervious; and at the Edge divided into five oblong Segments, somewhat unequal; two at the Top being smaller, and one at the Bottom larger than the two at the Sides.

The Filaments are insert'd in the Body of the Flower, and they also are unequal: two being longer than the others; this is an Inequality which the Student has been already inform'd, marks a LINNAEAN Class, the *Didynamia*; and the succeeding Fruit, which is loose, shelly, and form'd of the Remains of the Flower, making a kind of Capsule for the Seed, shews it to be one of the *Angiospermia*: the Seeds being cover'd marking that Sub-distinction.

Culture of the CORYMBOUS SELAGO.

This elegant Shrub is a Native of *Aethiopia*, where it naturally lives in a poor, barren, sandy Soil. On these Articles, we have inform'd the judicious Gardener, is always to be founded the Culture and Management of Plants; and what Experience has added to confirm this Practice, we shall lay down in the present Instance.

To suit the Soil to the Nature of the Plant, it must be dry; and yet to give it the full Vigour in our Country, there must be some Richness: this must be given without encumbering the Mass; and it may be happily effected thus:

Throw in a Heap a Barrow of Under-turf Earth, from a dry Common: add a Peck of Coal-ashes, two Pecks of Marle, and a Pound Weight of fine Shavings of Horn, such as are sold at the Lanthorn Cutters.

Let this be put together at the present Season, and lie all Winter.

In this Compost the Shrub may be rais'd from Seed, or otherwise.

If from Seeds, they must be had from the Place of its natural Growth, for it does not easily ripen them here. This is also a tedious Method: for both which Reasons we prefer, where Slips can be had, the propagating it that Way.

To this Purpose, early in Spring, let half a Dozen small Pots be fill'd with this Compost: let as many Slips be carefully taken off from a thriving Plant; and pierce them thro' and thro', in two or three Places, with a fine Awl.

Then plant one in each Pot; give it a gentle Watering; and all being so set, place them in a Bark

Nov. a Bark-bed of gentle Heat up to the Rim of the Pot.

Shade them carefully; and water them every other Day. Let them have all this Assistance of Warmth, Shade, and Moisture to make them take Root, and after they have shot, admit the Air to them by Degrees.

They will thus be hardened and strengthened, and when they have stood some time longer in these small Pots, let some larger be filled up one Fourth with the same Compost; as many as there are thriving Plants.

Loosen with a thin-bladed Knife, the Earth from the Sides of the small Pots, and get it out

entire, place this with its Plant upright in the larger Pot, and fill up carefully in the same Mould: Give a gentle Watering, and set them upon the Tan in the same Bed for some Days, watering them every Evening.

This will strengthen them to bear the open Air by raising the Glasses, and when well established, they must be brought out in the middle of a warm cloudy Day, and set among the Exotics.

After this they require no particular Treatment: They must only be managed as the rest, and at the Approach of Winter be taken into Shelter.

Nov.

3. YELLOW INDIAN SIDA.

Pl. XII. This for the Beauty of its Flower and hand-
Fig. 3. some Growth, deserves its Place in any Collection.

The Generality of late Authors have been acquainted with the Plant; but it is one of the numerous Instances how ill the Distinctions in Botany were established, till LINNÆUS.

PLUKENET, and BOCCONE, join to call it an *Alibea*. The first *Alibea Carpinifolia* --- The latter *Alibea Virginiana Bidens*. --- COMMELINE calls it an Alcea or Vervain Mallow, *Alcea Carpinifolia*. --- And DILLENIUS, a Malvinda.

LINNÆUS and VAN ROYEN name it a Sida, and add to distinguish the Species, *Foliis cordato ovatis serratis, Stipulis setaceis, axillis subspinosis*. Sida with serrated, oval and heart-shaped Leaves, with bristly Films, and the Insertions of the Branches somewhat prickly.

The Root is white, large and divided. The Plant is two Foot and a half high.

The Stalks are round, upright, and variously divided into Branches.

On these the Leaves are placed with a becoming Wildness. They are of a handsome Figure, long, elegantly indented at the Edges, sharp-pointed, and at the Base where they are broadest, they are indented in a heart-like Manner for the Stalk.

From the Bosoms of these rise small Stalks and Branches, for the Support of the Flowers; and with them filmy Substances and a kind of harmless Prickles in the Place where they join the main Stalk.

The Colour of the Leaves on these smaller Branches, is a pale greyish Green.

Those on the main Stalk are of a deeper Green, but scattered over with a silvery Down, which gives them a Paleness to the Eye, and makes them soft and velvety to the Touch.

The Flowers are large, elegant, and numerous; they are scattered in a manner all over the Plant. Some rise with simple Foot Stalks from the Bosoms of the Leaves; and others are placed at the Extremities of the smaller Branches.

They are of a pale but very elegant Yellow,

something deeper than Lemon-peel: and they have yellower Buttons in great Number in the Centre.

To know the Class to which the Sida belongs, let a single Flower be examined carefully; its Cup is form'd of one Piece, wide at the Mouth, and indented in five Places round the Rim.

The Body of the Flower is composed of five distinct Petals uniting at their Base; these are broad, obtuse at the End, and very narrow at the Base.

The Centre of the Flower is occupied by a tubular Body, formed of numerous united Filaments. These at the Top separate again, and stand free some Part of their Height, and have at their Tops rounded Buttons.

The Style is short and single: the Flower being fallen, appears a Fruit, in the whole of a roundish pointed Form, but composed of numerous Cells joined one to another, which when they separate appear horned.

The Construction and Arrangement of the Filaments in this Flower, being singular, are the Characters of its Class and not their Number; we have made the Reader acquainted with the sixteenth in the LINNÆAN System, the *Monadelphica*. Its Characters he has seen, is, that the Filaments coalesce at their Bottoms; this Character he reads in the present Flower, and he is therefore to refer the Plant to which it belongs to that Class.

The third Section or Subdivision under it, containing the *Polyandria*, the Number of Filaments and their Dispositions here; very plainly discover that it is also of that Division.

Culture of the YELLOW SIDA.

This Plant is a Native of the *East* and *West-Indies*; and in both is found in the same Soil, which a deep and rich black Mould, at some small Distance from Water, or near the Foot of a Hill.

This is to be our Rule for its Culture; and let a Compost be thus made for it. Mix together
four

Nov. four Bushels of under Turf Earth, from a rich low Meadow, one Bushel of Cow Dung, and half a Bushel of Pond Mud. Let these be laid together at the present Season of the Year, and they will be ready when wanted.

Early in Spring let the Seeds be sown upon a Hot-bed covered with good Garden Mould.

When the Plants are three Inches high, let the best of them be selected for raising, and planted each in a small Pot, filled with the Compost just described.

Let these be set in a Bark-bed, and shaded and watered till they have taken Root; then let them be gradually hardened to the Air.

As they grow large, let larger Pots be provided for them. Let a little of the Compost be put

in each of these, and let the whole Lump of Earth be taken out of the small Pot with the Plant.

Set this upright in the larger Pot, then fill round with more of the Compost; give a gentle Watering, and set them on the Tan-bed again, till well fixed, and hardened, by opening the Glasses carefully.

After they are thus raised to a due Height and Strength, let them be set out in the middle of a warm cloudy Day; and placed among the Exotics.

At the Approach of Winter, let some of them be taken into the Green-house, and some into the Stove; they will flower longest and fullest in the latter Place.

4. C A N A R Y B E L L - F L O W E R.

Pl. XII. There is not a more beautiful Plant than this, Fig. 4. if we take in the Consideration of all its Parts, in the *Campanula* kind; and scarce its superior in any other.

The Disposition of the Leaves as well as their Form, attract the Eye; and the Figure, Place, and Aspect of the Flowers fill it with Satisfaction.

The earlier Writers were not acquainted with this Species, but among the later, scarce any have omitted to name it; and the Characters of the Genus are so strongly impressed upon it, that all have agreed to call it by the same Name, *Campanula*.

To this LINNÆUS adds, as a Distinction of the Species, *Foliis hastatis dentatis oppositis petiolatis, capsulis quinque locularibus*. *Campanula* with spear-pointed and dentated Leaves placed opposite on Foot-stalks, and with five Cells in the Seed Vessel.

Our Gardeners call it universally from the Place of its natural Growth, *Canary Campanula*.

They do not chuse to part with a *Latin* Name when they have got it, though the *English* one be ever so familiar.

The Root is tuberous and hung about with Fibres.

The Stalk is round, upright, and six or eight Feet high, purplish at the Bottom, and of a pale Green upwards.

The Leaves rise sometimes two, sometimes three at a Joint. These are very distant: and from their Bosoms generally shoot up some young Stalks, which give a very beautiful tufted Appearance to the Part of the Plant where they are situated.

The Leaves have long, slender, and reddish Foot-stalks: they are of a beautiful greyish Green, and of the Shape of a Spear Point, with two Beards at the Bottom: they are sharp-pointed and serrated at the Edges.

The Flowers are large and elegant, they hang drooping, and they are of the perfect Bell Shape, and of a bright flaming Yellow, tinged with Red.

The Seed Vessel is large and contains numerous Seeds.

The Flower must be laid open to discover those small Parts, on which the Characters of the Class are impressed.

It is hollow, deep, broad and impervious at the Base; and at the Edge is divided into five Segments. When thus torn open, there appears in the Centre of the Base its Nectarium. This must be first observed, because the Filaments rise from it. It is composed of five small pointed and convergent Scales.

Upon the Tops of these are placed the Filaments, which are therefore also five; they are very small, and they have long and flatted Buttons.

In their Centre appears the Style, which is longer than these Filaments, and has a Crown upon its Top of an oblong Shape, divided into three Parts, which when mature turn back.

The Number of the Filaments as they stand regularly, shews the Class of the Plant: it is one of the *Pentandria*, the fifth of LINNÆUS; and its single Style shews it one of the *Monogynia*.

Culture of the CANARY BELL-FLOWER.

We have given the Gardener his everlasting Rule, to find the Soil most proper for his Plants by enquiring in what kind they naturally are found in their proper Country.

This is usually to be learned in the more accurate Botanical Writers. With respect to the present Species in the *Canaries*, it is always found in a dry sandy Ground, and notwithstanding that Disadvantage rises to twelve Feet in Height.

This should be our Rule for the Compost suited to it, and upon this I have experienced with Success the following Mixture.

Take two Bushels of Upland Pasture Ground, one Bushel of Wood-Earth, and half a Bushel of Sand. Mix all these well together; and let them be exposed to the Air from *November* to *Midsummer*.

The Plant is in so many Gardens, that it may always

Nov. always be had; and the best Method of its Propagation is by parting the Roots.

To this Purpose let the Gardener wait till the Stalks which flowered, are decayed; that is the Period of Rest for the Roots; and they are then to be parted without Danger. Let this be done with a careful Hand, and the principal Root very lightly touched.

Fill as many Pots with the Compost just described, as there are Roots for planting, and place each carefully in the middle of the Pot. Cover it two Inches with the same Soil, and give the Earth a gentle Watering.

Set the Pots in a warm shady Place, and once

Nov. in four Days very lightly sprinkle the Mould till they begin to shoot. When the Stalks have a few Inches height, let the Waterings be larger and more frequent.

In the Beginning of *September* they must be set among the Exotics; and at the Approach of cold Nights*removed into the Green-house.

Thus they will flourish perfectly well, and beginning to flower about this Season, will continue thro' the whole Winter. In *March* the flowering Season will be over; and the Stalks will soon after begin to decay; but they rise again in all their Vigour in the Beginning of *August*, and flower as in the preceding Season.

4. YELLOW CLUSTER FLOWERED ALOE.

Pl XII. The Aloes are in general handsome Plants, and they succeed one another very happily at this Season; when Flowers in general are scarce.

Fig. 4. This is an elegant Kind; and deserves the more Regard, as it differs from the Generality, particularly in the Colour of the Flowers, as well as in their Disposition: the Leaves also have their Singularity.

Its Characters are so strongly impressed, that most who have written of it, have called it by the Name of Aloe.

LINNÆUS distinguishes the Species by the Title, *Aloe floribus sessilibus reflexis imbricatis prismaticis*: Aloe with prismatick Flowers hanging downward over one another, and having no Foot-stalks.

The Root is thick and yellow, and sends out numerous, large, and very long Fibres.

The Leaves rise in a great Cluster, and they are extremely long and narrow; of a triangular Shape, and of a deep green Colour; they are involved together at the Bases, and with good Culture, will rise to five Feet in Height.

The Stalk rises singly in the Centre; and is round, thick, upright, and five Foot high. Upon the Top of this are placed the Flowers.

They stand in a vast Cluster, one laid above another; and they are large, and of a very deep strong yellow. They are singly, of the Length and Thickness of a Child's Finger.

This is all greatly to the Advantage of the Plant: but its Scent is disagreeable; it is not however strong, or offensive, unless purposely smelt.

The Flowers, whose Form is truly that of the Aloe Kind, should have prevented Error, in Respect of the Genus, but they have not done so universally.

This is the Plant which BREYNIUS has called *Iris uvaria flore luteo*: led to it by BODÆUS in his Commentaries upon THEOPHRASTUS, who tho' he has figured the Plant, yet led by its Leaves instead of regarding the Flowers, has called it by a like Name.

Our Student when he sees the Flower hollow, and placed naked on the Stalk, divided
No. 12.

at the Edge into six Segments, and containing as many Filaments, can no more mistake its Genus than its Class: he will know it to be an Aloe, one of the *Hexandria*; and by its single Style, which is very obvious, as soon as the Flower is torn open, he will know it belongs also to the *Monogynia*.

Culture of the YELLOW CLUSTERED ALOE.

The Native Country of this Aloe, is the *Cape of Good Hope*, and it there lives only in damp rich Soils. The black Mould, which is the common Soil of the swampy Places, in that Country, is its natural Ground.

This is very different from the Soil in which the Aloes in general delight, and it shews also, that more frequent and large Waterings are required for this, than for any of the other Species.

This must be the Method of bringing the Plant to Perfection here: and this shews the great Error of those Gardeners, who following the Instructions of Writers, no more capable than themselves, of tracing in the Volumes of the Learned, the true Account of the Species, or learning their distinct Nature, order one Soil for all the Kinds: as if, because the Name of a Plant were Aloe, it therefore demanded a particular Degree of Dryness, or of Moisture, in the Soil supporting it.

According to these Instructions, here proposed from Nature, let this Aloe have a peculiar Compost, altogether different from the others, and thus prepared.

Just pare away the Turf in a wet rich Meadow, and take of the fine black Mould that lies under it four Bushels, add to this of Marle one Bushel; of Wood-pile Earth three Pecks, and one Peck of Cow-dung.

Let this be laid together, two Months, or more, turning it once in a Fortnight, and it will then be ready for Service.

In this the Plants are to be propagated by Means of those Suckers, or Off-sets, which they yield in
N n abund-

Nov. abundance, where they thrive tolerably. The Time for planting these, is the Middle of July.

They must be taken off with great Care from the Mother Plant, and laid two Days upon a Shelf, in a cool airy Place to harden. After this one must be planted in each Pot in this Compost, and that with all possible Care.

When they are all planted, let the Pots have a very gentle Watering, and set them in a warm shady Place. Here let them stand another Fortnight without any farther Care.

Then bring them to a Bark-bed, which has a very moderate Heat, and set in the Pots two Thirds of their Height in the Bark: draw a Mat over the Glass, and thus let them stand all Day.

In the Middle of the next Day, raise the Glasses a little, by a notched Stick.

Nov. In this Manner let them be kept in the Bed three Weeks, and then by Degrees more and more hardened; till at length the Glasses are taken quite off in the Middle of a warm Day.

After this, they may be removed into the Greenhouse, and from thence into the Stove.

This is the Method of bringing them to their greatest Perfection.

They must be frequently watered in the Stove; the Water having stood there four and twenty Hours, to bring it to the Temper of the Place.

Under this Management, they will grow a great deal during the Winter; and in Spring will be in a fine Forwardness towards flowering. They are singular in the highest Degree, even in the Leaf, and a great Ornament to the Place.

5. *Crimson Papilionaceous Flowered GERANIUM.*

Pl. XII. The Variety of *African* Geraniums, is equal to their Beauty. This is a Species, singular and elegant in the highest Degree; and worth a Place in the best Collection.

Fig. 5.

The Leaves are not less peculiar in their Form than the Flowers; and from these most have named the Plant. HERMAN calls it, *Geranium anemones folio*. And COMMELINE, *Geranium myrtilidis folio*. LINNÆUS forming a more certain Distinction, by taking in also the Structure of the Flower, names it *Geranium calycibus monophyllis corollis papilionaceis vexillo dipetalo foliis bipinnatis*. Geranium with bipinnated Leaves, with the Flower-Cup of one Leaf, and the Flower papilionaceous, with two Leaves in the Vexillum.

The Root is tuberous and brown; round, and of the Shape and Bigness of a Turnep.

The Leaves that rise first from it, are large, and very beautifully divided; they have long, hairy, redish Foot-stalks, and they are cut into numerous narrow Segments: their Colour is an elegant pale green.

In the Centre of a large Tuft of these, rises the Stalk, which supports the Flowers; it is united with some of the inner Ones at its Base; but all the Way from thence it is naked; it is purplish at the Bottom, of a whitish green toward the Top, and hairy.

The Flowers terminate this in a Kind of Umbell, and they are very large, and of an elegant pale Crimson: they stand on long and slender Foot-stalks, a Part of their Petals hanging down, and the Remainder standing erect, each Flower has the Aspect of the papilionaceous Kind.

In the Centre appears the Tops of the Style, which is also of a fine Crimson, and adds not a little to the Elegance of the Flower.

The Seed-vessels which follow, resemble the Beak of a Crane, as in all the other Geraniums.

The more distinctly the Flower is examin-

ed the more it pleases. The Cup in which it stands, is formed of a single Leaf, and divided into five Segments. The Body of the Flower is composed of five Petals, and of these, three are turned up in the same Manner we have mentioned, and the other two hang down. This gives the Air of Singularity to the Flower.

We describe it in the most perfect State, mentioning the Colour to be throughout Crimson, for it is frequently white; but even in that Case it is not without its Beauty; for at the Part where the lower Petals droop, it is stained with two large and elegant Spots of Crimson.

Some Authors have considered it in this State, as a distinct Species; but it is no more than a Variety of the other, as LINNÆUS has more accurately determined.

To what Class the Geraniums are to be refer'd, we have explained at large before.

The Student who sees their Filaments united into one Body at the Bottom, and counts the Number to be ten, will not fail to know the Plant belongs to the *Monodelphia Decandria*.

Culture of the PAPILIONACEOUS GERANIUM.

The Plant is a Native of *Africa*, where it spreads its Leaves over the dry Earth, by the Sides of Forests, in a pleasing Luxuriancy.

The Soil in these Places is a light sandy Loam, enriched by the rotted Branches of the Trees. This points out naturally the Compost that is to be given it in our Gardens.

For this Purpose, bring in a Barrow of light sandy Earth from under the Turf in a common Pasture; mix with it a Bushel of Earth, from under an old Wood-pile, and add a Peck of the coarsest Sand.

This resembles its natural Soil, and in this I have raised the Plant to its most perfect Splendour.

Let this be prepared several Months before it



Three rib'd Ceanothus.

*Corymbous
great Selago.*

Yellow Indian Sida.



Canary Bell flower.

*Yellow Cluster flower
(Aloe).*

*Crimson papilionaceous
flowered Geranium.*

Nov. it is used, and turned frequently, that no Weeds may grow upon it; and that it may have all the Advantage of the Sun, Air and Rains.

There are two Methods of propagating it; the one by parting the Roots, and the other by Sowing.

The Way by Off-sets from the Root is easiest, and most expeditious; but this is a Kind which produces those Off-sets slowly. It ripens its Seeds very well with us, and therefore that is the best Way of procuring its Encrease.

Early in Spring let these be sown upon a Hot-Bed, scattering a few at a Distance, one from another; and covering them a quarter of an Inch with fine Mould.

When the Plants appear, pull up the Weakest, leaving only about half a Dozen, and these at a good Distance.

Thus they may stand till they have some little Height; then they must be removed into another Hot-bed; and after some Time in that, transplanted into Pots of the Compost.

These Pots must be set in a Hot-bed Frame, and the new planted Geraniums watered carefully. In this Place, they must be shaded, till well

Nov. rooted: and then hardened to the Air by Degrees.

When the Summer is advanced, they must be set out among the Exoticks, and at the Approach Winter taken into the Green-house.

Some of these seedling Plants I have usually found to bear Crimson, and others, white Flowers; but even the White, by Means of their Spots are very beautiful. There is no Way to be sure of the Colour of Flowers, but by planting Off-sets from the Roots.

These when they are to be had good, deserve Preference. They must be planted singly, in Pots of the same Compost, and after one gentle Watering, set in a shady Place.

When they begin to shoot, they must be brought where there is a more free Air, and some Sun, and from that Time watered gently once in two Days.

They will quickly come forward under this Management; and they are then to be brought out among the Exoticks, for the Remainder of Summer; and treated afterwards in all Respects as the others.

C H A P. II.

The Management of the Flower-Garden, for the Middle of November.

STILL there are some few Plants, which brave the Cold, and keep their Flowers upon them in the open Air; these are extremely to be cherished, tho' their Kind be but indifferent; and where there is less Value in the Plant, the Gardener may be more free in that Management, which will continue it Flowering.

The Care of the Plants in the Management of many who call themselves good Gardeners, robs the Ground of half its Beauty. We proceed upon a different Plan: we shall direct the Means of raising a Supply with little Trouble; and we shall never fail to put our Reader in Mind of doing it at a proper Time: therefore we shall direct him to be more indulgent to the Eye, in these late Seasons, even at the Hazard of his Roots; where that is necessary.

Our Plan is to render a Garden at all Times the most agreeable that it can be made; and where there is a Supply ready for the next Year, we shall be more free with those flowering Plants which decorate the present: This we shall explain in the Treatment we are about to direct for them.

The Season of Walking is not yet over, therefore let the Gravel be well rolled: it needs it more now, than at most other Times, for this will prevent the Wet from penetrating it, and the Frosts from mouldering it.

Let a good firm dry Walk be thus prepared,

and let the next Care be to provide, or to preserve a pleasing Aspect in the Borders.

Where Roots are planted that do not yet appear, nothing but Cleanliness can give Satisfaction.

Once in a Week let the Ground be lightly raked over these, till the Time of their shooting: it gives an Air of Culture, and is always pleasing.

Next let him look over the Plants which continue yet with some Flowers on them; and examine what are absolutely past it.

Let him begin with the latter, for the Management of them is very easy; and all that is to be done, is to cut them down to the Ground; then the Earth is to be raked over them, and a little fresh Mould scattered on.

This gives the same Aspect of Care and Culture that we have just described; and has two great Advantages beside: It destroys the very Rudiments of Weeds and Moss, and it strengthens the Plants for the succeeding Summer.

For this Work let him take the mildest Days: there will be Frosts occasionally, and they will mellow the Surface of the Ground. It will break easier under the Rake, and fall better about the Roots, than at any other Time.

This Care being over, let him look round upon those Plants, which yet have some Flowers on them.

He will find these naturally divided into two Kinds.

Nov. Kinds. The first consisting of small Plants, whose Flower-stems rise single, and naked from the Roots, and when cut, do not shoot out again; the others, those which have tall and branched Stems, and which naturally shoot out anew, wherever they are cut off.

This Property principally distinguishes them for the present Purpose, and their Treatment must be thus.

The Polyanthus may stand as an Instance of the first Kind: It continues now flowering; and it should be encouraged to do so, by breaking the Surface of the Earth about it; but not to any Depth; and by taking off the dead Leaves, drawing some fine Mould high above the Head of the Root, and by frequent gentle Waterings.

These Waterings must be given in a Morning, and if any Shelter can be added by a Reed-hedge, or by a few Furze-bushes, without deforming the Prospect, let that be given.

Some Narcissus's whose Roots were not removed out of the Ground at the usual Season, will now appear in Flower; these should be treated in the same Manner exactly as the Polyanthus; and the same Care continued to all such Kinds.

The Gardener will say, that breaking the Ground, will give the Frost Way to the Roots, and Water will also encrease its Power.

We have told him this already, and therefore he may be sure we are not ignorant of it.

Some will be destroyed by the severe Frosts that follow; and so let them: We do not direct him to treat the most valuable Roots in this Manner; but such as may be spared: and this Management will keep them flowering, with double their natural Lustre at the present Season.

Of the other Kind, the taller Plants which grow where they are cut, he will have several that yet shew some Flowers.

Some of golden Rods and hardy Asters, perennial Sun-flowers and the like, will hold up their Heads, tho' weakly, against the Frosts; and flower in its Defiance.

These let him encourage, and force to it as much as possible: if he weaken, or if he destroy the Roots, they may be supplied from the Seminary, and he will now make them render a most acceptable Service.

Let him go the Round of these, and treat them in this Manner; let him shorten and reduce the Number of their Branches; let him cut away all those Parts, which support Flowers past their Perfection; and leave all on that have Buds or Flowers new opened.

Having thus taken off all those Heads in which Seeds were ripening, which exhaust the Root more than all, and reduced the whole Plant to perhaps one half its original Quantity, the Nourishment which the Root is able to supply at

this Season, having less to support, will feed that the better. Nov.

Next let him give the Sources of more Nourishment, thus; let him stir the Ground about the Root, but not too deep; and let him lay round the Base of the Stem, some rotten Dung, and cover it with a thin Scattering of fresh Mould.

This done, let him give the Plants every Morning a gentle Watering, and what Shelter he conveniently can against the bleak Winds; and Night-frosts.

This Management will produce a Kind of Spring in Winter. It will weaken all the Roots indeed, and will destroy some of them, but these are easily supplied.

The Custom I have used to prevent any Disadvantage to the Ground from this Practice has been this.

When I have marked what particular Plants would be fittest for this Service, I have planted near them a good Root of the same Kind, at the Time of cleaning them for Winter flowering.

Then in the succeeding Spring, I have taken up the Roots I had forced in Winter; and set them in the Nursery to recruit, and left the others for the ensuing Summer.

Beside these Plants, there is a third Return of Beauty, for the present dead Season; this is in those hardy Shrubs, which though in general Natives of other Climates, endure the Winter in the Air with us.

These are to be treated in some Degree as the Flowers we have named, but with less Freedom; because there is more Trouble in supplying their Places, if lost, by Reason of their slower Growth.

Therefore let the Earth remain quiet about their Roots, and give them no Water.

These are the Things which would expose them to Frosts, wherefore let them be omitted; but in all other Respects let them be treated just as the other Plants; let the Gardener look over them, and reduce their stragling Branches; let him take off all those Shoots, supporting Flowers that are past their Lustre, and preparing for seeding; and let him encourage by this Means all those which are budding for new Flowers.

The Musk Rose will thus be kept flowering some Time longer, and the Cytisus and Colutæa, and all which thrive in our open Air.

These and whatever other Shrubs the Garden affords, are to be treated in this Manner, so long as they shew any Prospect of more Flowers; and they will thus be made to afford a great deal of Beauty at this Season, and will not be in the least damaged by the Practice for the succeeding Summer.

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SECTION II.

The Business of the SEMINARY, for the Middle of November.

LITTLE is to be done in the Seminary this Week; but let the Gardener see he do that little perfectly. Two Articles will require his Care; the new-planted Trees, and the Beds of seedling bulbous Flowers. The Danger is the same which threatens both: this is the Frost penetrating into the Ground when they are planted; and it must be prevented in both, by covering the Surface: but in a various Manner.

The Practice of Gardeners I have not found to succeed so well as they pretend; and I have seen more new-planted Trees and Shrubs lost in Nurseries, than they care to own. My Method has been more successful, and it is this:

The Earth about the Roots of these, having been clean'd in the common Manner, bring in a large Quantity of old Pea-stalks, or Bean-stalks, strew them thick between the young Trees, and tread them down: let the whole Surface be handsomely cover'd with them; and when they are well settled, drive in some long and strong Pegs in different Places, so as not to interfere with the Roots, to keep them better down, and throw on a large Quantity of Brick-bats or Pebbles.

These will press the Haulm down close, which is a very great Article; and it will thus rot in Part, and the best of its Substance will be wash'd into the Earth as Manure.

In the Spring, these Stones and Bricks are to be taken off: the Refuse of the Stalks is to be rak'd away; and the rest of their Substance, which remains on the Surface, to be dug in.

With Respect to the Beds of Seedling Flowers, which were not ready for Removal the last Season, they must be first of all clear'd of Weeds by Hand: then taking the Advantage of a mild Day, the Surface must be rak'd over, but not to any great Depth; and the whole being thus clean'd and levell'd, some very rich and well-mellow'd Dung, from a Melon-Bed, must be scattered thinly over the Whole.

This will wash in by Degrees in the Spring, by Means of the Rains; and in the mean Time it will

serve the excellent Purpose of defending the Plants from the Frosts of Winter.

This is an Article of great Concern, and liable to many Errors: we shall therefore take the present Opportunity of letting the Gardener fully into the Practice.

Dung is not to be us'd in the Compost for the Beds in which these Plants are to be set for flowering; for in that Case the Soil will be too rich, and will make them push out Leaves in Abundance, and tall Stalks, with poor Flowers: but this is a very different Period.

The Roots are now small, they require to be nourish'd; and 'tis no Matter for their present Produce. Therefore a little well-rotted Dung, wash'd gradually into the Ground, will swell them in the Spring, and do them Service that Way, after it has preserv'd them during Winter.

The common Director advises strewing some rotten Tan over these Beds at the present Season; but we have found, from repeated Experience, this is pernicious to the Roots.

Indeed that Author, in some Degree, contradicts himself in this Article; for altho' he orders Tan to be thus scatter'd over the Beds of seedling bulbous Flowers, in his Calendar *, he acknowledges in his Dictionary, that "preparing Flower-Beds with rotten Tan, is very pernicious to the Roots †;" declaring, from Experience, that in Respect of *Ranunculus's* and *Anemonies*, which are tuberous-rooted, he has lost more than half by this Practice, and spoil'd the rest.

It is true, that Tan will greatly injure and often destroy both bulbous and tuberous Roots, when they are at their full Strength; and we have found by Experience what Reason so plainly declares also, that it will, even in less Quantities, be prejudicial to them in the Seed-Beds: but that a little rotten Dung thus us'd never hurts them.

With this Caution let the Gardener proceed, and he will preserve and enrich his Roots. No Frost will reach them, and the Earth will be better suited to feed them.

* *Gardener's Calendar*, P. 313.

† *Gardener's Dict.* Art. TAN.

SECTION III.

POMONA, or the FRUIT-GARDEN.

CHAPTER I.

Fruits which remain yet in Season.

INTO this List, declining daily, and out of the Reach of all present Recruit, we must with Care take every Thing that good Management can preserve for it.

Nº 12.

The Service of the Table in a Desert, is one very essential Purpose of a Garden; and nothing more demands, or better returns the Care of the Gardener, than his Supply of it.

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Nov. The Pears and Apples which we have directed to be laid upon the Floor and Shelves of the Fruiterie, after due Sweating, come first into Use. From these he is to pick a Variety of Kinds, as they ripen with lying; and at the same Time that he takes out these for Use, let him with the utmost Care remove any that are decaying.

In the same Manner let him select from among his Grapes, Medlars and other Fruits, those which

are most liable to decay, reserving such as are Nov. pack'd up for longer keeping, in their Places.

With the Assistance of these, and the occasional Addition of Services, and the different Species of the Nut-kind, he may still keep up a Variety, and even Plenty, in this Respect: and the Pine-Apple, which comes now in sufficient Quantity from the Stove, will be always ready to crown the Entertainment.

C H A P. II.

The Care and Management of the Fruit-Garden and Orchard, for this Week.

THE Business of Pruning we suppose done in the common Kinds; but there yet remain some Articles for a strict Consideration.

The Fig is not like other Trees, for it is tenderer than most; and it requires, at this Season, a particular Management.

The Fruit-Branches, for the succeeding Year, are very likely to be destroy'd by Frost, if that be not now prevented by a proper Care. This will depend upon two Articles; the Defence of the Wall is the universal one, and the other is the Addition of a proper Shelter if requir'd by the peculiar Tenderness of the Tree, or by particular Severity of the Weather.

As the Wall is the first and most natural Defence, let Care be taken that the Trees have its Assistance in full Perfection. To this Purpose, let no Branch be left loose, for that will, in some Degree, rob it of the natural Advantage.

Let every one be train'd close to the Wall, and nail'd down by several Pieces. Let each be brought as close as can be done without forcing; but let as much Care be taken not to bruise, as not to leave them loose, for one will be as great a Damage to them as the other.

The Fig does not require so much pruning as many other Fruit-Trees; but they err who allow of very little.

The great Care must be to prune in such Manner, as always to have a Supply of young Branches, for these are the only ones that bear; and for this Purpose, it must be an universal Rule not to shorten any of the young ones at this Season.

The great Article therefore to be regarded at this Time, is the cutting out useless Wood. All the old Wood is useless: therefore wherever it can be spar'd, that is, where it does not support useful Branches, let it be cut away. This must be done with Boldness and Freedom; for Room must be made for the bearing Branches, and that can only be procur'd by clearing away the others.

The Wood of the last two Years is what almost entirely produces the Fruit; therefore the Gardener will not be at a Loss to know what he is to cut out, and what to spare. This being done, and the young Branches nail'd with the Care we

have directed, all is done that is requir'd for the present Season.

What Pruning is needful in the Way of shortening the Branches, is the Business of a different Season, and we shall deliver it in due Time.

This Care being now taken, the Gardener is to go over the young Branches with a careful Hand, and pick off all the late Fruit. This would only rot by being left on, and the Consequence would be its wetting the Branches, which the first Frost afterwards would from that Cause destroy.

After this, if the Frosts set in severe, let a good Quantity of old Pea-straw be hung upon the Tree, so thick as to shelter the young Wood, but not so close as to shut out the Air.

This done, these Trees may be left to Nature; and they will, by this Practice, not only be preserv'd during Winter, but will push out their young Fruit earlier in Spring, which will therefore have a much better Chance of ripening in Time.

Let the Gardener's next Care, in Respect of Fruit, be to clear, refresh, and enrich his Strawberry Beds.

The Beginning of this Work must be by Weeding, and this can only be done by Hand. Let him look over while the Labourer performs this; and where he sees the Plants stand too close and crowded, let him pull up here and there one; always the weakest.

When they are thus clear'd and thinn'd, the second Article is, to take off the Strings or Runners; these must be all cut from the Roots; and the dead Leaves at the same Time being taken away, the Gardener will see the right Condition of his Beds.

The third Article which naturally follows these, is refreshing the Roots. This is to be done by new Soil, which I have found, by Experience, to be no way so good as when mix'd of mellow Dung and fresh Earth.

Therefore let two Barrows of rich Mould, cut from under the Turf in a good Pasture, be mix'd with one Barrow of old Dung: or let a larger Quantity of this be made where the Plantation is greater.

When this is perfectly mix'd, let it be scattered all over the Beds half an Inch deep, and left in that

Nov. that Condition for the Rain to wash in its Virtue : No more Care is required in this Business than to see that no Plant of the Strawberries be buried at the Heart, so as to make it rot.

Last of all let the Alleys between the Beds be dug up a full Spit deep, and the Mould well broken.

Vast Quantities of Roots are sent from the Strawberry Plants into this Part, and the Ends of them are by this Means trimmed off, and there is a fresh Soil for them to shoot new Fibres.

These never fail to be produced from Roots of all Kinds, when they are cut in this Manner, and when there is a Mould thus broken to receive them.

It is thus the digging about the Roots of Trees assists them; and this is the Source of that vast Fertility, rising from the new Method of Culture in Fields, called the Horse-hoeing Husbandry.

The Hoe-Plough cuts the Soil while the Plants are growing, as digging up the Alleys in this Instance, and the same Strength of the Growth follows from both. The Strawberry never fails to produce after this, not only more Fruit, but larger.

This done, let the Gardener look to his Standard Apple-Trees, whether those formed into Dwarfs in the Garden, or such as are planted in the Orchard : Both are the Sources of every valuable Fruit for the Table, and they deserve all the Care which they demand at this Season.

We have spoke of the Mischief arising in Flower-Borders, from their being over-run with Moss, the same Accident happens particularly to Apple-Trees, and the Reason is the same : The Species of Moss is different, but there is no other Variation.

This must be cleared off, and the present Season is the best Time of the Year for doing it. The right Method is to clean it off it by means of a long Knife with a blunt Edge.

This may be used in the way of Scraping, and the Branches may be thoroughly cleaned, without being in any Part wounded. When this is done, let the whole Tree be examined for whatever else is amiss; if two Branches cross, or crowd one another at the Extremities, let one of them be cut off or thinned in that Part.

If in any Part there be loose Pieces of decayed Bark, let them be taken away and the Place cleaned wiped; Insects breed there, which after-

wards destroy the Fruit.

Wherever there is a Piece of the Bark rotten, let it be clean cut away to the Quick, for it will never recover, and if left on it will spread the Mischief.

Wherever a large Branch is cut off, the Place must be so contrived that Wet cannot lodge upon it. If cut with a Saw, it must be pared even with a Chissel, and made sloping downwards.

Very old Boughs should always be taken from Apple-Trees, for the Fruit which grows upon them, is smaller than naturally it should be. And there will never be any Difficulty in getting a good Supply of proper Branches; and bearing Wood in their Place.

Shoots suited to that Purpose are to be trained by Bandages into a proper horizontal Growth; and where there are none let a small Piece of Wood be cut out with a Chissel.

This preserving of young and proper Shoots for bearing, and taking off the old, is the great Art of producing fine Fruit from old Trees; for that never happens from any other Management.

When the Trees themselves are thus put in good Condition, the next Care is to be bestowed upon the Ground.

Let it be well weeded, and as often as Occasion requires enriched with Manure or Tillage; or best of all with both.

Docks and the deep-rooting Thistles are very pernicious in Orchards. The fewer Weeds of any kind are left there the better; but those which penetrate far into the Ground are detrimental in the highest Degree.

It is an Error to let Turf cover the Surface of the Ground in an Orchard; but when the Plantation is made in the old Way, with the Trees close, there is no Remedy.

The best Way of Planting, is such a Distance that a Plough can come between; and in that Case the Trees thrive every Way better; the breaking of the Ground serves as Manure without its Rankness, and the Sun and Air have free Passage, which is very essential to the good Taste and well ripening of Fruit.

The best Manure for an Orchard is a Mixture of two Parts Dung, and one Part Coal Soot. Let this be blended carefully, and spread all over the Ground between the Trees, not piled up in Heaps just about their Stems, according to the old Practice.

Nov.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

THE Products named in our last Catalogue continue in Season, and the Winter advances too quick for much Addition; we shall

therefore devote this Section to the Care and Management of the Ground.

Frosts grow severe, and the Gardener must keep

Nov. must keep a watchful Eye to defend his Products from them.

To this Purpose let him look round the Ground in general, and see that all his Reed-Fences are secure: If they in any Place are rotten, let him tie them up to firm Stakes; and if there be the least Damage in any Part, let it be thoroughly repaired.

Let him look round the Ground for its outer Fences, if they be of Pales or Hedges; and if there be the least Breach that had escaped his Eye before, or that has been broken since his last Review of them, let it be made up with the most perfect Care.

The cold Winds that come with Frost, nip and cut off more than the Frosts themselves; and nothing is so essential as perfectly guarding against them.

The Plantations will thus be well secured from the Violence of the outward Air, and that within the Compass of the Ground being thus open to what Sun there comes, and shut from all Indraughts and thorough Passage, will be warmer greatly than the general Temperature in open Places.

Hot Beds must be kept up in a moderate Temper for raising young Salleting, and such other Articles as can be supplied at this Time, or forwarded for early Spring; and there must be a great deal of Care to keep them in Order.

Their Heat is apt to decline, and the Plants are subject to grow mouldy in them. The first is the common Accident in Rains; and the other in Frosts and Fogs.

For the first, let fresh Dung be at Times piled round the Outside; and for the other, let the Glasses be opened as often as possible in the middle of the Day, for the single Circumstance; what occasions the Plants moulding is the want of Air.

The common Business of this Part of the Ground is to be thus performed. And with this the common Labour for the Week would end; but there remains a particular Article to be treated of in this Place. This is the Management of our BEANS sown in AUGUST.

For proposing sowing them at that Season we have been rudely attacked by an opinionated Person; and in our Answer to his rash Objections have said, that at the proper Season he would see how we intended to treat them.

This we shall now deliver in the Words of that ingenious Gentleman, who first proposed the Method.

S I R,

Gray's-Inn, May 21, 1756.

THE inclosed are my Thoughts on the Probability of raising the finer Kinds of Beans earlier than usual. You'll excuse my attempting the Sketch of a Journal of the Care that

may be necessary to produce Success therein; Nov. which may serve as a Series of Hints to a skilful Gardener in every Point: Could the Experiment be made under your Eye, it would then have the fairest Trial.

The Beans having been planted the last Week in August, if the Season prove dry, forward them to Blossom before the Winter Frosts set in, by moderate Waterings.

Upon the first Appearance of Blossoming, cut them down within two Inches of the Ground, in dry Weather. Cover the Roots or Stumps with Bell-Glasses a little raised on the South-Side, or with any other cheaper Contrivance, so that the Stumps may receive Air enough, to dry and heal gradually; for Rain, Snow, and Frost, getting into the Pipes of them during the Winter, would penetrate downwards, ferment and rot the Roots before Spring.

One Bell-glass may cover three distinct Plants in a Row. If, during an open Winter, any new Shoots put out from the Stumps after their being covered with the Glasses, do not totally displace them as fast as they appear, but rather encourage one or two to each Plant to excite the Suction, Circulation, and Increase of the Root during the Winter.

When the Winter Frosts set in, throw Litter, long Dung, Pease-haulm, or old Thatch over and about the Glasses; and frequently in moderate Weather stirring up the Litter, and giving Air to the Roots and Surface of the Ground about them to prevent Mouldiness.

I am with great Esteem and best Wishes for your Health and Undertaking.

S I R,

Your most obedient, humble Servant,

JOHN STEPHENSON.

Such are the Thoughts of this experienced Correspondent, to whom we have been indebted on more Occasions than the present, and of whom it is but Justice to say, that he treads in the laudable Steps of the great Dr. HALES, devoting his Studies to public Utility.

The Method which is here laid down at large for the whole Procedure, we shall illustrate farther, under the several Articles, when we treat of those Weeks in which they are to be perform'd.

It is here deliver'd entire, that the practical Gardener may, at one View, comprehend what is propos'd; and that the Author of the ill-consider'd Paper, in which the first Notice of the Method was publish'd, may learn a proper Respect for the Author of it; and remind himself to use more Modesty and Candour, when he speaks of Men so much above him.

E D E N:

A

COMPLEAT BODY of GARDENING.

N U M B E R XIII.

For the latter End of *NOVEMBER*.

S E C T I O N I.

F L O R A, or the P L E A S U R E - G A R D E N.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. LONG-LEAVED PHYLLANTHUS.

Nov.
P.XIII.
Fig. 1.

THE Singularity of this exceeds that of most other Plants, and cannot fail to recommend it.

It is a Shrub, Native of *South America*, and singular in the Form of its Leaves; but much more so in the Disposition of the Flowers, which, disclaiming the usual Course of Nature, burst from their Edges.

It has been described in Terms of Wonder by all the late Botanical Authors. *PLUKENET* has given it a very inartificial Name, *Filicifolia Hamionitidi affinis*; most others call it *Phyllanthus*; to this *LINNÆUS* adds, for the Distinction of the Species, *Foliis lanceolatis serratis; crenis flosiferis. Phyllanthus*, with lanceolate and indented Leaves; the Indentings being the Place of the Flowers.

It rises with due Care to a Shrub of eight Feet high. The Bark is brown on the Trunk, grey on the Branches; and these divide and spread wildly and with a fine Irregularity.

The Leaves are numerous, and stand in as little Order as the Branches. They are seven Inches long, and not half an Inch in Breadth.

They rise without Foot-stalks, and they are sharp-pointed and indented; they throw themselves at first horizontally from the Branches, and as they acquire the full Bigness, frequently turn in a

Numb. XIII.

hooked Manner, resembling Sickles. Their Indentings stand at Distances; their Colour is a very lively Green: Their Substance firm and hard.

The Flowers are small, but of an elegant and lively Purple, not deep but fleshy; they stand along both Sides of the Leaves in the Indentings, and whether in the Bud or open, give the Plant a very beautiful, as well as singular Aspect. When in the Bud they are of a deeper Purple.

To know the Class and Place of this strange Shrub in the *LINNÆAN* System, the Student must examine more than one Flower. Let him take off two or three Leaves loaded with them, from different Parts of the Plant; and first looking into 'em as they stand, observe their general Difference. He will perceive some to have a few Threads and Buttons, and others only the Rudiment of a succeeding Fruit.

These two Kinds being found upon the same Plant, shew that its Class is that of the *Monacia*, the twenty-first in the *LINNÆAN* System; but let him examine them farther; to know in what Arrangement they stand under that general Class.

The Buttons which are White upon the Threads in the Male-Flower, appear as so many snowy Spots on the pale Purple, which is its general Colour: These are three, and that is the Number of the Stamina; the Shrub is therefore one of the *Triandria*, the second Sec-

Nov.

Nov. tion of that Class.

In the Female-Flowers appears the Rudiment of the Fruit, crowned with a Rim of twelve regular Points: This is the Nectarium of the Flower, whose Place is on the Germen. Petals there properly are none; for the fine Purple Part, is but a coloured Cup. It is formed of a single Piece, spread out at the Rim and divided into six small Segments. The Fruit is a small three cornered Capsule.

We have named the native Country of this Shrub, and that will inform the Gardener in a general Manner of the Degree of Heat requisite for its Preservation; the second Article is the proper Soil: in *America* it grows in rich and mellow Land. This therefore must be imitated here.

Culture of the PHYLLANTHUS.

In Autumn let the Gardener mix together, one Barrow of rich Mould from under the Turf in a Meadow, half a Barrow of Pond Mud, a Peck of Wood Earth, and the same of Marle; and if the Marle cannot be had, a Peck more of the Mud, and two Pounds of Chalk.

Let these be well mixed and turned once a Week; then fill proper Boxes with the Composition, and bring them into the Stove, where the Plant is preserved.

Its Branches will easily bend down to the Surface of the Mould, when the Boxes are supported on a small Tressel; and let one which will come with little Force be brought down to each Box.

Nov. Let it be slit through in two Places with a sharp Penknife; and twist a Piece of Wire just above these Slits.

Bring it into the Mould, that the wounded Part may be covered three Inches deep; then fasten it down with Pegs or Strings, and covering it up carefully with the Mould, give it a gentle Watering. Repeat this as Occasion requires; observing when the Earth grows dry: And let the Water be always such, as has stood four and twenty Hours in the Stove.

In this Manner the Layers will root freely, and the Shoots from them will grow during the Winter in the Stove. About the End of *March* they will be fit to remove.

Then fill as many Pots as there are Layers, with the rest of the Compost which has lain out all Winter: into each Pot place with Care one of the Layers cut from the Mother-Plant, with as much of its own Earth, as will hang about it; give these a gentle Watering; and set the Pots up to the Edge in a Bark-bed. Shade and water them till well rooted in the Pots, and then by Degrees harden them by admitting free Air.

In the hottest Months, they may be set out among the Greenhouse Plants, and they must then be managed like the rest, watering them occasionally, picking off dead Leaves, and stirring the Earth at the Surface from Time to Time.

They will make a very handsome Figure the second Year, and they will flower the fourth. It may also be raised from Seeds, but that is tedious.

2. VIOLET FLOWERED ÆTHIOPIAN ROELLA.

P.XIII.
Fig. 2.

In the former Plant, the Situation of the Flowers claimed the Attention of the Curious; and, in this their Beauty. It is not easy to conceive any Thing more noble than their full Lustre, or to name a Plant which more deserves the Notice of this Age of Curiosity.

Many of the late Writers have named it, and most of them with peculiar Praise of its Beauty. *PLUKENET* calls it, *Aculeosa Mauritanica Erica foliis*. *COMMELINE* and *SEBA*, name it as a *Campanula*; and some others have distinguished it under the same Title, with various Additions.

LINNÆUS, names it a *Roella*, a Genus distinct from the *Campanula*, though allied to it; and adds as a Distinction of the Species, *Foliis ciliatis mucrone reflo*. *Roella* with strait-pointed and ciliated Leaves.

It is a shrubby Plant, but of no great Height. The Root is whitish, large and divided; and it sends to a great Distance a Number of thick Fibres.

The Stem is woody, and covered with a brown Bark; it divides almost from the Ground into innumerable Branches, and forms a wild Bush of very pleasing Aspect.

The Leaves are small, but very singular in Form and Construction. They rise inordinately

all over the Branches, and have no Foot-stalks; they are oblong, narrow, sharp-pointed and of a very firm Substance. Their Colour is a lively Green, and they are on each Side edged with Rows of fine Hairs, resembling weak Thorns.

This singular Kind of Hairiness of a Leaf, is what *LINNÆUS* expresses on this and other Occasions, by the Term ciliated, resembling Eye-Lashes.

The Flowers terminate the Branches, and they are large and very beautiful, each formed is of a vast single Petal irregularly divided into four, five, or six great Segments at the Edge. The Colour of these Segments is a deep and glowing Purple, and in the Centre the Flower becomes paler, and almost White.

This is the Colouring when the Plant is well managed, but otherwise the whole will be of an uniform faint Flesh-colour, and sometimes white. In this Case, the Plant is robb'd of half its Beauty.

After the Flowers come Seed-vessels, divided into three Parts, and fill'd with minute Seeds.

To know the Class to which this Plant belongs, and see for what Reason and with what Justice *LINNÆUS* has separated it from the *Campanula*, let the Flower be carefully examined.

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Nov. The Cup in which it stands, is made of a single Piece, and divided into five serrated Segments.

The Body of the Flower is form'd of a single Petal, tubular a little Way at the Base, and deeply divided at the Edge; and in its Bottom stands a Nectarium, compos'd of five little pointed and convergent Scales. From the Nectarium rise five Filaments, with long Buttons: in the Midst of these a single Style crown'd with a double Top. After the Flowers come the Seed-vessels, which are crown'd with the Cups.

The Class to which the Plant belongs, the *Pentandria Monogynia*, is very evidently seen: and were there no other Mark, the Division of the Stigma, or Top of the Style, would sufficiently distinguish it from the *Campanula* Kind.

Culture of the ROELLA.

The best Method of propagating this Plant is by Sowing; and the Seeds will never succeed so well as when brought from *Africa*, its natural Place of Growth.

They must be sown upon a Hot-Bed, early in Spring, and rais'd with the usual Care, transplanting them from one Bed to another, as they gather Strength; and, after three Removals, into Pots.

For their Reception in these, a Compost must be prepar'd at this Season of the Year, or at the latest at the Time of Sowing them. It is best made thus:

Mix four Bushels of rich Earth, from a Pasture, with one Bushel of Pond-Mud, five Pecks of old Dung from a Melon-Bed, and two Pecks of Sand: let this be well wrought and turn'd together; and when the Plants are of such a Size as to be remov'd from the third Hot-Bed, let them be planted in it in middle-siz'd Pots, one Plant in each.

When they are set, let them have a gentle Watering, and place the Pots in a Bark-Bed, that has not too much Heat, to promote their free Rooting: after they have been shaded and carefully water'd some Days, in this Bed, let the Air be admitted by Degrees; and let them thus be hardned, for bearing the open Situation of the Green-house Plants in Summer. Let them be plac'd among these in the warm Months; and, at the Approach of Autumn, taken into the Greenhouse. There let some be plac'd for the Winter; and others in the Stove.

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The Root is spreading, and full of Fibres.

The Stem is slender, weak, and edg'd; but it will run to a great Length if supported, and will spread out in a pleasing Wildness, into a Multitude of scattered Branches.

The Rind is of a greyish brown toward the Bottom, and paler in the younger Shoots; and the Branches generally swell out at the Joints, where the Leaves, and Fruit and Flower-Clusters rise.

The Leaves are large and handsome; they are supported on short, purplish, hairy Foot-stalks. They are broad at the Base, wav'd at the Edges, and sharp-pointed. Their Colour is a very bright green; but toward Autumn they usually grow purplish, and they are naturally a little downy: this is sometimes more, sometimes less, and often scarce perceptible.

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Nov. Colour rises from the Culture, and therefore cannot constitute a distinct Species, any more than a Difference in Size from the same Cause, or the frivolous Distinction of a more or less downy Leaf.

The Juice of these Berries stains with a very glorious Colour, but it is not lasting. If Art could fix it properly for Dyeing, it would become a very valuable Article in that Trade.

The Flower, examined strictly, appears to consist only of a Cup, and the Parts of Fructification. What seems of the Body of the Flower is this Cup, which is form'd of a single Piece, divided at the Edge into four Segments, and in Colour white.

Within this Cup, in which there are no Petals, stand four small Filaments, distinctly crown'd with their separate Buttons. In the Centre of these appears a single Style, short, and produc'd from a large and roundish Body, the Rudiment of the Fruit.

This, by Degrees, ripens into the perfect Berry, and the Cup remains under it, but changes Form and Colour: it becomes green, and its Segments roll back. In each Berry is contain'd a roundish rough Seed.

PLUMIER, who gave the distinct Name *Rivina* to this Genus, judg'd better than those who had annex'd it to the *Solanum* or *Amarantus*; but 'tis to the Author here celebrated alone, that we owe the proper Establishment of the Character.

PLUMIER has figur'd eight Filaments in the Flower: Nature allows but four; and this would have remov'd the Genus many Classes from its proper Place in the System.

It is one of the *Tetrandria Monogynia* of LINNÆUS; the fourth Class, and its first Section.

Culture of the RIVINA.

The Plant is a Native of *Jamaica*, *Barbadoes*, and the *Caribbee Islands*; and it there rambles in all its Wildness among the Thickets, supporting itself by the Branches of slender Shrubs.

The Soil in which it is most frequently found, is a light Loam, enrich'd by the decay'd Leaves and rotten Branches that fall from those Trees and Shrubs under whose Shelter it thrives. This points out its proper Culture.

The Seeds carefully taken out of its Berries, will freely grow; and they are best from the Place where it is native, and are easily obtain'd thence; but they will grow if taken from the Berries here.

At this Season, in which there is Leisure enough for such Purposes, let the Gardener mix together a Load of light Hazle Loam, cut from under the Turf in a good Pasture, and half a Load of Earth from under an old Wood-Pile. This is an Earth we have often recommended, and with great Support from Reason and Experience.

It is a kind of Virgin Soil, having born no Vegetable many Years, and 'tis enrich'd by the rotted Wood. It answers all the Purposes of Willow Earth, but better.

This Mixture being prepar'd, let it lie all

Winter, sometimes turning it; and in the succeeding Spring it will be fit for Use.

The Quantity we have nam'd, is more than will be wanted for this Plant; but it will serve for others which naturally require the same kind of Soil. It is a Compost unknown to the common Gardeners; but superior to most they use.

In this Point Experience has directed us, from a long Trial, of the Mixture in which the several Plants best thrive; and we shall, from that Experience, direct, so far as we have try'd, or certain Judgment reaches, a peculiar Mixture for the several Kinds we name.

These particular Composts the Gardener may use for each, or at his Pleasure, that which is most like the Kind describ'd out of the Number he has prepar'd for others.

After this Choice in the Matter of Compost, the next Care is the gathering the Seeds, and preparing them for Sowing.

I have found that, of the Seeds ripen'd in *England*, those which are taken from the Berries, in *November*, are what succeed best. Let this be therefore the Time of gathering them.

Pick off the ripest Berries from a flourishing Plant; and taking out the Seeds, dry them carefully upon a Sheet of spongy Paper, in an airy Place. After they are thoroughly dry, tie them up in a double Paper Bag, and lay them by till Spring.

Early in that Season scatter them upon a good Hot-Bed, and cover them half an Inch deep with Mould; they will rise with the common Care bestow'd on Hot-Bed Plants, and when they have some little Height, the weakest may be pull'd up, that only a few thriving Plants remain.

After a Week more, these must be transplanted into another Hot-Bed; and when they have stood about three Weeks in that, they must be planted in Pots.

Let these be fill'd half up with the Compost, and then the Plants set in upright, one in each Pot, and secur'd by carefully pouring in more Mould. When they are well settled, let them have a gentle Watering, with Water that has stood four and twenty Hours in the Stove, and let the Pots be set up to the Rim in a moderate Bark-Bed.

Let them be shaded carefully till they have taken Root; and at Times water'd. After this let the Glasses be lightly rais'd; and when they are thus very well establish'd, let them be remov'd at once into the Stove.

There they must be treated as the other Plants, giving them, during Summer, as much Air as they can bear; and they will grow very fast.

They are beautiful while there is no more than the Leaf to recommend them, for that is well shap'd and well colour'd; and the Growth and spreading of the Plants under a good Gardener's Hand, is very pleasing. In Autumn it will flower, and soon after the Fruit will ripen.

This hangs at the present Season in innumerable Clusters of scarlet or of purple Berries, decorating the Stove; and will continue in the same Beauty all the Winter.

Nov.

Let not the Reader, in this or other Instances of a like Nature, suppose, when we recommend the placing Plants in a Stove, we mean they will not live out of that Heat.

The common *Rivina* will keep alive many Years in open Ground: and tho' the whole Plant perish to the Surface in Winter, the next Spring sends new Shoots from the Root. But this Way it has not half its natural Beauty; nor will a Green-house keep it in Perfection.

We mention those Methods by which all the Plants we name will grow to their highest Perfection. Those who have Stoves will not fail thus to bring them in all the Beauty we describe:

For such as do not enter into that expensive Part of Gardening, 'tis easy to raise this, and many more of the Stove-Plants, in common Hot-Beds; and 'tis worth the Trouble. They must be planted where there is most Sun and Shelter, and then take their Chance: a Part will be lost inevitably; and of those which remain, few will retain their full and natural Lustre: but in whatsoever Degree of Vigour they live, they will be an Article of Ornament and Variety to the Garden.

Some there are Natives of warm Climates, which will succeed much better this Way than in the Stove itself; because, if able to endure the Season, they have there more Air.

Nov.

4. CANDY CHRYSANTHEMUM.

P.XIII.
Fig. 4.

This, tho' a Native of a much warmer Climate, lives freely in the open Ground with us; and, whether in the double or the single State, is beautiful.

Fashion prevails for the admitting only double Flowers into Gardens; but tho' the common Writers direct tearing up the single, and throwing them away, we shall shew their Use, and advise a better Practice.

This is an old establish'd Plant in our Gardens; the earlier as well as later Writers name it, and all under its proper Generical Title; too strongly impress'd upon the Flower to be mistaken or overlook'd by any.

CLUSIUS figur'd it under the Name *Chrysanthemum Creticum*; Crete being the Place whence it was first receiv'd: and MORISON and RAY, and our English Writers, have taken the same Title.

C. BAUHINE calls it *Chrysanthemum foliis Matricariæ*; and LINNÆUS, always distinct, expressive, and perfect in his Characters of Species in their Names, *Chrysanthemum foliis pinnatifidis incisissimis extrorsum latioribus*: *Chrysanthemum*, with Leaves divided in the pinnate Manner, and cut, and broader at the outer Part. This Character rises as the Species, with Certainty even without the Assistance of the Flower.

The Root is long, white, and furnish'd with numerous thick Fibres.

The Stalk is round, firm, upright, of a pale green, broke into many Branches, and lightly hollow in the Centre.

The Leaves stand without Order in great Numbers, and they are very beautiful. Their Colour is a greyish Green; and they are divided in a most elegant Manner into numerous serrated Segments.

The Flowers, in vast Number, terminate the Branches, and rise on small leafy Stalks from the Bosom of the Leaves: they are of a deep yellow when they first open, which by Degrees grows paler; and they have in the Centre a yellow Disk.

This is the natural and simple State of the Flower; and the Plant, suffer'd to grow luxuriant in its wild Freedom, and cover'd with these, has a very fine and elegant Aspect.

Nº 13.

Culture will make them double in various Forms, and quill the Leaves, as in the best Flowers of *African* Marygolds. In these States Authors (and tho' we blush to say it, some of Credit) have describ'd the Plant as if of various Species. Hence the *Chrysanthemum flore luteo pleno*; and *Chrysanthemum Creticum petalis florum fistulosis*.

These Errors are transcrib'd with faithful Diligence into the *Gardener's Dictionary*; and 'tis for redressing them, and telling the Student a double and a single Flower of the same Kind, make the Plant differ as a Variety only, not as a Species, that the great LINNÆUS stands censur'd and accus'd of Errors by that Author.

Let our Reader remember on all Occasions, that adding by good Culture to the Number of Petals in a Flower, does not change the Species of the Plant: that no Culture can do this; that Nature is too fix'd and certain in her Works; and Man's Art bounded within narrow Limits.

This Truth let him establish, in Contempt of little Writers; and having confirm'd in his Mind what these double Flowers and quill'd Flowers of this, the *African* Marygold, and others are, let him not reject, but consider in what Manner to improve, and when and how to use them.

This is the Business of the Gardener, inferior to the Study of Botany as much as Art to Science; yet far from deserving Neglect.

Let him be careful that these Varieties, thus plac'd in a higher Rank than they demand by Writers, do not impose upon his Understanding; and then let him indulge his Fancy in their Culture. This is the Path of Science; clear in itself, and only made perplex'd by foolish Guides.

Culture of the CANDY CHRYSANTHEMUM.

It is an Annual, and to be rais'd from Seeds; for when they are perfected Nature has done her Business, and the Root dies.

In its native Countries it is found constantly in a loose, mellow, and rich Soil: our Garden-Mould answers very well to this Purpose; and no Compost need be prepar'd for it.

Let good Seeds be sav'd from quill'd or double
Q q Flowers

Nov. Flowers, of the best Kinds in our Gardens. Let them be gently harden'd, by spreading upon a Shelf in an airy Room; and afterwards put by till Spring.

Early in the Season, let them be sown upon a good Hot-Bed; and brought forward with the usual Care.

Where they rise very thick, let a few of the weakest be pull'd up; and when the rest by gentle Waterings have been brought to due Strength for removing, let them be transplanted to another Hot-Bed.

On this they are to be brought forward by the same Care, shading and watering gently, till they have taken Root; and afterwards encouraging them by some Sun and Air.

From this second they are to be remov'd to a third Hot-Bed, and treated in the same Manner as in the former, till they shall be well rooted: then they must have, by Degrees, more Air; and when they grow so as to fill the Frame, they must be planted out before they are stunted by the Covers.

The Summer will, by this Time, be so well advanced, that they may, without Danger, be allow'd the full Air.

Let Holes be open'd for them in proper Parts of the Border, where the Mould is very fine: and let them be carefully brought thither with a large Ball of the Hot-Bed Mould about their Roots.

In each of the Places where one Plant is intended to stand for flowering, let two Holes be open'd at a small Distance from one another; and one Plant from the Hot-Bed set in each.

Let these be planted with good Care, and from Time to Time water'd in an Evening.

In a few Weeks they will begin to shew their Buds for flowering; and let the Gardener carefully watch their first Opening.

The Seeds of double Flowers do not produce all double-flower'd Plants, tho' it is a good Chance there will be many.

Let Provision be made at this Time for such as are single, and also for one of the two when both appear double; for only one is intended to remain in a Place.

To this Purpose, let Holes be open'd at proper Distances in some of the wildest Parts of the Garden, among Thickets, and in the Borders of a

Court-Yard; and let some Pots be fill'd with the richest of the Garden Soil. Nov.

When one of the two Plants appears to have single Flowers, let it be carefully taken up, and planted in the Holes open'd for that Purpose, in the Places just nam'd; and where both are double, let one of them be taken up with the utmost Care, and planted in a Pot.

They will now begin to flower, and there will be three distinct Setts of Plants, tho' from the same Seeds.

Those in the wild Places will grow to a great Bigness, and spread every Way in a pleasing Irregularity. Their Flowers will be extremely numerous, and of a fine strong Colour.

In these the Botanist will trace the Characters of the Plant, for they will be obliterated in the double; and these Plants will have a wild Beauty, which to the Eye of a true Taste, equals at least the best of the others.

The second Kind will be those which remain in the Borders: these will be large, and very finely cover'd with double Flowers; some of the quill'd and others of the plainer Kind.

The third Sort will be those in Pots. These will differ from the others, in that they will be smaller; but they will naturally have more and larger Flowers. These may also be preserv'd longer, by being brought into Shelter; and thus will be obtain'd the very finest Kinds.

Let the Seeds for a succeeding Year, be sav'd from the finest and best of these, the largest Flowers of the quill'd Kind; and there will need no farther Care about them.

These being sown in Time, in the Spring, will afford a Succession of Flowers at Autumn; and the Return of the Growth will confirm what the first shew'd, and what we have so carefully inculcated, that the same Seeds produce some single and some double Flowers; and of the last all the various Kinds: therefore that these are all no more than Varieties; the Species continuing unalterably the same.

This Course of Thought uniting Botany and Gardening, illustrates the one Study, while it ennobles the other: Gardening, without that Science, is the Amusement of a Child; but thus connected with it, becomes itself a great Part of a very noble Science, uniting experimental with natural Philosophy.

5. NARROW-LEAV'D ÆTHIOPIAN CALENDULA.

P.XIII. We here propose to the Student a Plant mistaken by too many who have written on it; for hitherto the Botanist and Gardener have been distinct: nor must he, who wrote the Dictionary of this Art, so long in Reputation, suppose he did any thing toward uniting the two Characters, when he translated the Mistakes of *TOURNEFORT*, and plac'd them at the Head of his Rules for Culture.

The candid Reader will not be offended at our so often naming this Person with Censure: we write for the Improvement of the Art: that Improvement can no Way be made but by the Assistance of this Science; nor can that be usefully join'd to it, or the Art brought to its Perfection, while Errors are permitted to give Reputation.

This Plant stands as an Instance of the Necessity; as it has been call'd by various Names; and, in Con-

Nov. Consequence directed to be managed in different Manners; for till the Science is understood, the Name directs the Culture: this we have shewn in Aloe, and shall in others.

VAILLANT has called it a *Dimorpbotheca*; BOERHAAVE, a *Caltha*, and COMMELINE, a *Bellis*; LINNÆUS, who established on just Characters, the numerous Genera of the Syngenious Class, calls this a *Calendula*; and VAN ROYEN follows him: He adds by way of Distinction of the Species, *Foliis linearibus subintegerrimis caule subrotundo*. *Calendula*, with narrow and almost undivided Leaves; and with a Stalk nearly naked.

The Description of the Plant will shew with how much Justice he has used these nice Distinctions.

The Root is fibrous and perennial.

The first Leaves are produced in great Number, and form a thick Tuft with a pleasing Irregularity. They are long and narrow, smallest at the Base, broader at the Point, and of an elegant Green; usually they are undivided altogether at the Edges, but sometimes they are waved, and sometimes a few of them have one or more Indentings.

Among these rise the Foot-stalks which support the Flowers; they are round, upright, slender, and a Foot in Height, and they are almost naked.

Their Colour at the Base is Purple, they are Green higher up, and towards the Top whitish.

The few Leaves these Stalks have on them are towards the Base, for upwards they are altogether naked: These resemble those which rise immediately from the Root; but they are of a somewhat paler Colour.

On the Summit of each Stalk stands one Flower; so large, the Top generally bends with it. This is naturally elegant, and it becomes yet more so by Culture.

It consists of a yellow Disk, surrounded by a Number of oblong and broad Petals thrown wildly about it; and often turning their Backs inward from a waved Manner of growing.

In the State of Nature these Rays are of a Snow White on the Inside, and of a fine Crimson on the Back; but Culture will throw the Crimson in Streaks over the Inside of the Petals, or stain them throughout with a fleshy Purple.

Sometimes also they will rise more numerous; the natural Disk will be obliterated, and thus the Flower be double.

We have before explained the Construction of the Flower in the *Calendula*, and referred it to its Class; and we shall here only refresh the Students Memory by a short Recapitulation.

In the Disk are many short and tubular Flowers, and on the Verge several long and flat ones; in those of the Centre, which are the only perfect Flowers, there stand five Filaments, whose Buttons coalesce and form a Cylinder.

This shews the Plant is one of the Syngenesia. In the flat Floscules on the Verge are only the Female Parts, the Rudiment of the Fruit with its Style; and these being impregnated, as well as the Rudiment in the external Series of the

Disk itself by the Floscules in the Centre. The Subdivision to which it belongs, is that of the *Polygamia necessaria*. The various Ways of Impregnation appear necessary, because the central Flowers never bring their Seeds to Perfection.

The Plant last described here, *Cbrysanthemum*, is of the same Class; and we have therefore, to prevent Repetition, reserved the mentioning it to this Place, where it will stand illustrated by the other.

The Floscules in that Flower, are tubular in the central Part of the Disk, and flat at the Rim; but there the central Floscules ripen their own Seeds, as well as impregnate those of the Verge.

The Buttons on the Filaments coalesce in the same Manner as in the *Calendula*, therefore it is of the same Class; but the ripening of the Seeds in the flat Flowers of the Verge, which have no male Parts of their own, by Means of the Farina from the others, being not necessary to the Propagation of the Plant, that falls under another Subdivision, the *Polygamia Superflua*.

In both these, and in all others, the single Flowers must be examined, for the Parts on which the Characters of the Class are founded; for in the double ones, they are nearly obliterated by the Profusion of Petals in the Place of their Growth.

Culture of this CALENDULA.

The Plant is a Native of *Æthiopia*, and there lives in mellow and rich Soils; therefore to give it the true Culture here, it should have a light fine Mould; and the Heat of the Stove; It will live with less, but it will thrive much better in this.

The Seeds are best obtained from the Place of Growth, if there be Opportunity; but if not it will rise very well from such as are ripened here.

It is best propagated this Way first that the Plants with the handsomest Flowers may be selected: But afterwards it will bear very well to be encreased by Roots.

Early in Spring, let some of these Seeds be sown in a common Hot-bed: When the Plants rise, let them be thinned to a due Distance; and here let them stand a Month, duely watering them.

At the End of that Time, prepare as many Pots as you chuse to preserve Plants. Fill these with fine Garden Mould, mixed fresh for the Purpose, with about one fourth Part Wood-pile Earth.

Set the Plants carefully in these Pots; and when you have fixed the Earth about their Roots, and drawn it regularly to the Heads, set them up to the Rim in a Bark-bed.

Water them with Water that has stood in the Stove a Day and Night, and shade them with Mats till they are well-rooted. Then harden them by Degrees to the Air; and in the hottest Season set them out among the Green-house Plants.

At the Approach of Winter remove them into the Stove, and they will begin to flower soon after;

Nov. after. If the Flowers are cut off when they fade, without letting them stand to seed, new Stalks will continually shoot, and a Succession of them appear throughout the Winter.

When the Flowers appear, it will be easy to

Nov. separate the indifferent from the finest Plants; let these last alone be retained in the Stove, and after this, let new Sets be annually obtained by parting the Roots.

6. PURPLE AFRICAN SHRUB-MALLOW.

P.XIII. The Mallow kind is very numerous, and there are few belonging to it, but may claim a Place in our Collections either for Singularity or Beauty.

This has some Claim on both Accounts, and deserves to be received into any Collection.

The Characters of the Genus are so thoroughly expressed in its Flower, that none has called it by any but the proper Name *Makva*.

LINNAEUS adds to distinguish the Species, *Folius subcordatis laciniatis glabris, caule arborecente*. The Mallow with smooth, jagged and somewhat heart-fashioned Leaves. Others have called it *Makva Grossulariae folio*; and our Gardeners thence the Gooseberry Mallow.

It is a Shrub of regular and handsome Growth, with large and graceful Leaves, and with very showy Flowers.

The Root is woody, spreading and full of Fibres.

The Stem is firm, thick, brown, and a little hairy.

The Branches are numerous, and the Leaves on these stand frequent: They have long brown Foot-stalks; and they are broad, waved, and indented at the Edges, and of a greyish Green.

The Flowers rise from the Bosoms of the Leaves; and grace not only the Top of the Plant, but in a Manner the whole. They are large and of an elegant bright Red with Purple Bottoms.

We have acquainted the Student already with the general Distinctions of the Plants of this Kind, by which they are referred to the *Monadelphous* Tribe; and they are in none stronger, than in this Flower.

When examined carefully, it will be found composed of five Petals, which are united at their Bases: It stands in a double Cup, the outer one consisting of three Leaves, and the inner of one divided at the End into five Segments.

In its Centre stand numerous Filaments, free and loose at their Tops, but at the Bottom uni-

ted into a Cylinder.

This shews the Class the *Monadelphia*; and the great Number of the Filaments declares it to be of the Section, called from that Circumstance, *Polyandria*.

The Fruit succeeding each Flower, is composed of numerous Cells, arranged in an orbicular flatted Form round a columnal Receptacle; each containing one Seed.

Culture of the PURPLE SHRUB MALLOW.

The Plant is a Native of *Africa*; and thrives there among Rocks where there is little Mould, and that dry and barren.

This points out its proper Culture. It will need some artificial Heat; and will succeed best potted, and in a Soil not too rich.

Let a Compost be made for it, of a Barrow of Earth from a Common, with a Bushel of Pond Mud, and a Peck of Sand.

Mix these at the present Season.

Early in Spring let some good Seeds be sown in a Hot-bed. The Plants will come up freely, and they are to be from this transplanted into another.

When they have acquired some Strength in the second Bed, they must be removed into Pots of a middling Size, filled with this Compost; and these, when the Plants are settled in them with a gentle Watering, are to be set in a Bark-bed, burying the Pots half-way in the Tan.

Let them be shaded at first, and afterwards by Degrees hardened a little to the Air: When the Glasses have been removed once or twice in the middle of the Day, let the Pots be taken out of the Tan and set among the Exoticks, which at that Season enjoy the free Air.

There let them stand the Summer, and in the Autumn be removed with the rest into the Shelter of the Green-house. They will flower the second, if not the first Year.

C H A P. II.

The Care and Management of the Flower-Garden, for this Week.

FROSTS generally set in so sharp at this Time, that unless there come the Chance of a milder Day, little is to be done, or little enjoyed in the Garden.

There will be always something to employ a careful Gardener in the worst Weather, and we shall direct him to make the best Use both of such, and of the more favourable.

We



Long Leaf'd Phyllanthus.



Violet flower'd Ethiopian Roella



Rivina?



Candy Chrysanthemum



Narrow Leaf'd Ethiopian Calendula



Purple African Shrub Mallow

Nov.

We have directed the making a Variety of Composts, some suited to peculiar Flowers or Plants; but others that may serve for several Kinds.

That Mixture which serves one Plant, whose original Place of Growth is in a fine rich Mould, will serve another naturally found in the same Soil; and so of all the rest.

It is therefore we have directed the making most of these Composts in large Quantities: They are needful for the particular Plant on whose Account they were named; and the Gardener is to observe this plain and constant Rule in their Use.

October and November are very good Times for preparing these; and he has Time for it, because less hurried with the common Business of a Garden at that Season.

The best Place for laying these, is some open Spot on the outside of the Garden; no Matter how near, for they are not offensive. If he have followed our Directions, he has already several Heaps of them, and will have more.

Though what we have here named, might serve most Plants, we shall add to them occasionally in treating of those we name hereafter, what Mixtures we have severally found best suit them.

At this Time let him go the round of those he has, and mark them for Distinction.

It is natural he should before have stuck a Stick in each, or some other such Help to Memory: But something more should be now done. They are to lie yet several Months. And a Mistake would be of bad Consequence.

Let him now cut as many thick and stout Pegs as there are Heaps, and marking them by Notches, drive them into the Ground; one at the Edge of each Heap; and keep an Account in Writing of what Kind they are, and for what particular Plant intended; as also what for others they may serve.

This done let him now dig up every one of them: The Frost is not yet so fixed most Years, as to harden these Heaps too much for the Entrance of his Tools; and if at any Time it should, he must defer it longer.

Let him not judge by this particular Year what will be the Course of all; nor try our Directions by the Test of the particular Weeks in which they are published: They are not written for this one Year in particular, but for the Service of

all others; and they take in the several Instances, not as they may chance to occur one Year, but as they most generally happen.

In digging up these Heaps of Compost, which will always be a needful Employment about this Time, let him remember it is his Business to break all Clods; to mix all the Parts very well, and to lay the whole up when he has done, in a high Ridge.

Then let him give it a good moderate Watering, and leave it to the succeeding Frosts. They will affect it the more for this Wet; and it is what he desires. Nothing mellows a Compost more.

This Work is to be repeated once in three Weeks, or at the utmost once a Month during the whole Winter; and by this Means all the Heaps will be well blended, and ready for screening in Spring.

This done, if the Weather be any thing mild, let him look to such Parts of the Garden, as are planted in a modern Taste, with Clumps of Shrubs, or any other, where there are Shrubs or small Trees.

Let him first go through the Ground, to prune and set right these in any Part where it may have been omitted at an earlier Season; or where some Accident may have rendered it needful now.

The careful Gardener will find something always to be done, to perfect Things in these Plantations.

When the Shrubs are set right, let him clear the Ground, raking off the Rubbish, and cutting down the decayed Stalks of Plants.

This done, let him go to work as in the vacant Flower Borders; let him dig up the Ground between one Shrub and another, leaving the Flower Roots placed between unhurt, and when he has well broke the Earth, let him take off their dead Leaves, draw some Mould about their Roots, and then rake all level.

This will give a Cleanliness and a Look of Culture: the digging of the Ground will be like adding Manure; and if there be any more Shrubs tender than the rest, they may be defended as we have directed for the new-planted Ones in a preceding Number.

The Leaves of the Plants interspersed will now make an agreeable Appearance, and all will have that Air of Freshness and Life, which never fails to rise from any regular Culture.

Nov.

S E C T. II.

The Business of the SEMINARY, for the present Week.

NOTHING can be now added to the Plantations in the Seminary; therefore all the Gardener has to do, is to take Care of those he has sown and planted already.

N^o. 13.

3

Let him place Hoops over all his Beds of tender and young Plants, and have Mats or Cloths ready to draw over them in the worst Weather. They must be defended by this Method,

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Nov. not only against the severest Frosts, but the heaviest Rains; which to many of the Kinds would be as prejudicial.

Let him next go the Round of his new planted Trees; and examine their Stakes, and see how the Stuff lies about their Roots, which we have directed to be scattered there, for covering of them.

Let him rock the Stakes a little with his Hand; for he may be sure the Wind will do it: And observe whether they bend in their Substance, or stir in the Ground: If it be the latter they must be driven in farther.

If in any Part the Haulm or other Matter, covering the Ground between lie thin, let him take in more; and if any Part of it be loose, let him lay on more Weight, or drive in more Pegs for securing it.

When all is safe there, let him see to his Seed-beds of the larger Kind.

If the Earth cracks dangerously, let him scatter on a little more Mould, and over it some light Covering; and let him keep his Traps for Vermin baited.

The Severity of the Season sends these Devourers out in more Hunger than at other Times;

and if they find the Way to one of the Seed-beds they will make great Havock. [Nov.]

It is easy to see by the Traps, and by their Traces, whether any have found their Way thither; and if it be so, no Diligence should be omitted to destroy them.

Every Day these Traps should be new baited, and from Day to Day the Consequences watched; till there appear no more Marks of them.

We are in general Enemies to Dung in the Nursery; but there are some particular Purposes which we shall mention hereafter, wherein it may be useful; for such let a particular Spot be now set a-part, and the Dung brought in.

This must not be new or rank: What comes from an old Melon-bed, is fitter than any other for the Purpose.

Let it be brought in this Week, and scattered thick upon the allotted Piece of Ground, which should be first lightly broke on this Surface. This done, let the Dung lie on the whole Winter; and let the Rains of Spring wash it into the Ground.

After this being dug in, there will be all the Advantage from it which can possibly be obtained from Manure.



S E C T. III.

P O M O N A, or, the Fruit-Garden.

C H A P. I.

The Method of preserving Pears and Apples in Baskets.

THE most unexperienced would smile, should we attempt at this Season to add to the Catalogue of those Fruits, which may be supplied from the Store-room.

All that can be done, is to take Care of what are there; to take up such for Service first, as will come soonest to Decay if left; and to look from Time to Time over the others, to see they remain in Order.

We have directed the finest Kinds to be packed up in Jars; and upon their being safely fastened down, will depend their Preservation. If in any Part the Rosin has flown, or there appears a Crack from Accident, let some fresh Rosin, with a very small Addition of Beeswax, half an Ounce to a Pound, be poured on hot.

The keeping them from the Air is all the Security of those Fruits; and therefore they must never be opened till wanted, and when a Jar is opened, they must be used in a little Time.

Some fresh Straw should be now and then scattered over those which lie on Shelves or on the Floor; and the Frost fenced out by keeping the Windows close shut.

It will now be a proper Time for putting up some of the best Pears, that lie upon the Floors and Shelves, in Baskets; and also some of the

finer Kinds of Apples: For these will make a Supply, at a Time when those left upon the Floor are gone: And the Jars need not be opened till the latest Part of the Season.

Pears in particular, keep very well in Baskets with Straw about them; and nothing could have put the Method out of Fashion, but the unartful Manner in which our Gardeners performed it.

We learned it from the *French*, who preserve most of their fine Pears this Way. But whereas they basket them after sweating and lying on the Floor: Our People, for so their Instructors advise them, basket them at once from the Heap.

The Fact is this: Pears will keep several Months in Baskets with Straw, provided they are all perfectly sound when put into them; but if there be the least Tendency to Taint or Rottenness in any one of the Parcel, it will destroy the whole.

Now those who take Pears from the Heap in which they are laid at Gathering, immediately into the Basket, cannot be sure of their being all Sound; but in this Method we are about to direct, there can be no Mistake, nor have I ever known even a single Basket fail.

This is the Method to be observed: We have directed

Nov. directed the Gardener already to pile up his Fruit in a Heap; and when the proper Sweating is over, to spread a good Part of it on the Floor and Shelves of the Fruiterie.

It will now have lain some Weeks, and it is to be basketted for longer keeping. Let some deep Baskets be prepar'd, and set on a Kitchen-Dresser all Day, that they may be thoroughly dry and not heated; and let a good Quantity of Wheat-Straw lie there among them, to dry perfectly in the same Manner.

From Time to Time there will have appear'd some tainted Fruit, which we have directed to be taken away as soon as seen. There appear'd no Mark of Rottenness in these when they were wip'd from the Heap; therefore they would, in the common Way of Basketing, have been put up with the others; and many of them would have rotted there, and tainted all the rest.

Now all that were dispos'd most to decay, have been separated; and therefore picking the finest and soundest of such as remain, there is almost a Certainty of their keeping.

Let the Baskets be lin'd at the Bottom and Sides with some of the Wheat-Straw; and thus prepar'd brought into the Fruiterie.

Let the best of the Pears be pick'd off from the Floor and Shelves, and one by one wip'd and laid carefully into the Baskets.

When they are fill'd, cover the Pears well with more of the Straw; and then fasten down the Baskets.

Tye it up by a String in the Fruiterie, and thus proceed with the whole Number.

The Temperature of the Air being duly preserv'd in this Room, by shutting the Windows in Frost and Fog, and opening them (whatever Ignorance or Obstinacy may say against it) in mild dry Days, the Fruit will keep a long Time.

All bad or decaying Fruit that shall appear after this, in the Room, must be carefully taken out, for it will infect the Air; and after this there will be no Danger.

Let the Gardener however go in once in two Days, during the Winter, to see all keeps as it should; and he will perceive by the Smell whether there be any thing amiss.

If he suspect Rottenness or Mouldyness, let him never rest till he has found out the Cause, and

remov'd it. He need not unpack the Baskets in this Search; the Fault is rarely in them: indeed scarce ever, if he have bestow'd due Care in picking the Fruit for them; or if it be, his Smell will discover in which, and he will need unpack no other.

In this Case he should lay out the good Pears for present Use, not pack them up again when he has thrown out that which has occasioned the Damage: for it is scarce to be conceiv'd how slight a Degree of Contagion will spread itself thro' the Whole. Thus we direct the Gardener, on all these Occasions, to sort and separate his Fruit according to the Degree of Goodness.

These on the Floor, from which he is to fill the Baskets, are but a second Kind in Value; for the Prime of his Gatherings are in the Jars.

Even these may be divided into three Kinds, a better, a middling, and a more indifferent: and it will be very proper to do it, at the Time of Basketing; in this Manner:

The finer being taken up for that Purpose, the inferior Kind will be left upon the Floor, to be eaten first. Of the fine ones taken up for Basketing, all will not be alike; and it will therefore be easy to divide them into a first and second Sort. The first or finest need not be many, and they may be preserved with yet greater Care in the Baskets.

There is a kind of very thick coarse Paper; it is reddish in Colour, and it comes from *Holland*; the Apothecaries use it for Filtering.

Let some of this be dry'd in the same Manner as the Baskets and Straw; and let these finest Pears, when they have been carefully wip'd with a Flannel, be wrap'd up, one by one, in half Sheets of this Paper, if of the largest Kinds; or for the usual Size a Sheet cut length-wise into three, is a proper Quantity. In this the Body of the Pear is to be wrap'd, and it must be brought close, and ty'd gently with a double Thread at the small End.

When they are thus paper'd, let them be laid in a Basket, lin'd at the Bottom and Sides with Straw, and cover'd with more.

A Mark should be put upon these particular Baskets, that the Gardener may know where to find them on any Occasion. They will be preserv'd very perfectly, and always in fine Order.

C H A P. II.

The Management of Fruit-Trees for this Season.

A Few Words may comprise all that can be necessary to be done under this Article for the present Week. Our Gardener has, before this Time, planted wherever Trees were wanted; and having been warn'd of the Power which Frosts have over Trees rock'd in the Ground by Winds, he has stak'd such as stand free, and nail'd those to the Wall, which are planted for that Purpose.

We have only to remind him now to go the Round among them, and see all that he made secure remains so. Let him examine if no Stake

is loose, nor any Nail has flown; and let him scatter a little Haulm, or some other Covering upon the Earth, about the Bottom of the Stems.

If any thing have been omitted of what we have directed in the preceding Weeks, let it be done, or omitted in this, according to the Weather. If that be frosty, all the Expectation of Advantage is at an End for the Season: and what has not been done when it should have been, must be let alone till Spring.

Nov.

S E C T. IV.

Nov.

CHLORIS, or the KITCHEN-GARDEN.

WE can add nothing this Week to the Catalogues we have given in the preceding, of Products from this useful Part of the Ground which remain in Season; for it is not Time for any to come in. The whole of our Attention must be therefore directed to the Management of the Ground; and that will consist more in defending from Injuries what there is upon it at present, than in adding to the Number of the Crops.

What we have said of the Fruit-Garden, is, in general, true also of this Part; That the two great Seasons of Planting, are the Autumn and the Spring: the Autumnal Time is over, and the Spring long to come. But there are yet some few Things which may occasionally be done, and these we shall not omit to lay before the practical Reader.

If the Weather be severe, and the Ground too hard for working, let the careful Gardener take his Opportunity of preparing for a more favour-son.

Where the Ground will want a Refreshment of Manure, let him now carry it in, and throw it, not in Heaps, as some idly do; but spread it over the whole Surface of that Part of the Ground for which it is wanted. By this Means it will be more affected by the Frost; which will answer an excellent Purpose in taking off the Rankness of it, and preventing the bad Taste it otherwise gives to the Products.

Let him, within Doors, look over his Seeds which will be requir'd in Spring, and perfectly clean and make them ready for using at that Season.

Let him look over his Tools, and repair and put them in good Order, that when the Weather permits him to work, he may do it without Hindrance.

From Time to Time let him look over the several Products that are in Danger from Frost, and repeat and continue all the Means we have directed for their Preservation.

If the Weather be milder, let him sow Carrots in some warm Part of the Ground, to take their Chance; and let him open Drills for Pease; and plant some more Beans to come in, if the Frosts should spare them, in Succession, after those we have before directed to be put into the Ground.

No large Piece should be allotted to these Plantations, for they are only made to take their Chance, which is uncertain; and in their best Success they make but a very small Part of the Provision under this Article.

Nothing will demand more Care, at this Season, than our *August* Beans: and all new Proposals should be allow'd the fairest Trial.

Since the Publication of our last Number, we

have been favour'd by Colonel *Stevenson* with some farther Particulars relating to their Management, which we shall deliver in his own Words.

Grays Inn; Nov. 5, 1756.

S I R,

I Find by what Mr. *Osborne* has communicated to me, you are engaged in a defensive War with the all-sufficient Mr. *Millar*; whose greatest Merit was to have wrote on this Subject before you did; and whose great Fault is to arrogate Perfection therein, by opposing any farther Improvement from others.

As the Battle of the Beans must be fought, I should be sorry to have involved you in it, without contributing all in my Power to its Success. Therefore what I would farther chiefly guard against, is, the Admission of the cold, moist, and frosty Air of Winter into the Pipes of the Stalk after Amputation.

To prevent this, I would advise they be all stop'd with small Plugs of tough Clay, well temper'd with a gentle Salt-Water; and that the Stalks of all such as derive from the Seed, planted from the Middle of *August* to the Middle of *September*, be, when preparing to blossom, cut off about Mid-way of the Stalk, so as to leave some Leaves, if not some Side Branches or late collateral Shoots from the Root; to encourage a moderate Continuation of the Attraction of Sap from the Root.

These collateral Cyons from the Roots (which are very frequent) need not be lopped, till there is an apparent Preparation in them for blossoming, but then the Knife should gradually prevent their too great Exhaustion from the Parent Root. The whole Matter is to keep Life on foot till Spring, after the Roots have been well established and arrived to near their Size for propagating their Species, which they certainly are when preparing to blossom.

I think the Rows may be guarded against the superabundant Wet and Cold of Winter, by previously digging out between them a Trench of one Spit or more deep, according to the Soil and Situation. But all these Considerations I must submit to your Judgment. The Success may depend much on Experience, and what Degrees of Severity the Plant will really bear; which I believe has never yet been sufficiently explored.

I am, with great Respect,

Sir, Your most humble Servant,

J. STEVENSON,

E D E N ;

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XIV.

For the last Week in *NOVEMBER*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants yet in their Beauty.

I. The POLYANTHOUS PRIMROSE.

Nov.
P. XIV.
Fig. 1.

WE propose here to the Gardener's Care a Plant as universally known as any that can be brought into a Garden : but those Things which are most familiarly known, are not always best understood : we hope to give him some Information even on this common Head.

It is known every where under the Name of the *Polyanthus* ; but this is an Abbreviation of its proper Title : the true Name is what we have here given it, the *Polyanthous Primrose* ; that is, the many-flower'd Primrose : in *Latin* it is call'd *Primula foliis sinuatis rugosis floribus umbellatis speciosis* : Sinuated rough-leav'd Primrose, with handsome umbellated Flowers.

The Root is compos'd of numerous thick Fibres.

The Leaves rise in a Cluster, and are large, oblong, broad, of a deep green, irregularly wav'd at the Edges, and obtuse at the End.

In the Centre of these rises the Stalk, which, when the Plant is in Strength and Vigour, is thick, firm, upright, and ten Inches high, and bears at its Top a large Tuft of very beautiful Flowers. These are supported on their separate Pedicles, rising together from the Head of the main Stalk ; and they are naturally of a beautiful Crimson, with an Eye of yellow.

Numb. XIV,

When weak or ill manag'd, they will produce a single Flower upon the Stalk, in the Manner of the common Primrose ; and when encourag'd by a right Culture, they will throw out a vast Number on each Head, whose Variations in Colour will be extremely pleasing : and the Beauty in many of them equal that of the Auricula.

The Stalk will also, from great Nourishment, sometimes have Films upon it ; and the Edges of the Cups of the Flowers will be swell'd out by a leafy Addition, stain'd with Purple.

These are the several Appearances of the *Polyanthus*, which some have understood to be only a Variety from the common Primrose ; rais'd by long Culture : but I have found that when the Plant comes nearest its plain original Appearance, having a single Flower upon a Stalk, it still differs altogether from the common Primrose, or any other known Kind.

To know the Class of this Plant in the LINNEAN System, let the Student examine a Flower ; first entire, and then torn open.

Considering the whole Bunch, he will find that has its common Cup, form'd of several small Leaves, rising about the Bases of the Footstalks, at the Head of the main Stem.

Beside this, each Flower has its peculiar Cup ;
S s and

Nov.

Nov. and this is long, tubular, and mark'd with five Ridges. It is form'd of a single Piece, and divided into five Points at the End.

The Body of the Flower consists of a single Petal. This is tubular at the Base; and is terminated on that Part by a small rounded Neck, whence it spreads into five broad Segments, which are nip'd or wav'd at their Edges.

The Flower being torn asunder, there appear the Filaments; these are five in Number, and they are contain'd within the tubular Part. On their Tops stand pointed Buttons. In the Centre of these rises the Style, which is single, and terminated by a round Top.

The Seed-vessel is oblong, and the Seeds are small.

The Threads and Style shew the Place of the Plant in the LINNÆAN System: Declaring it one of the *Pentandria Monogynia*.

Culture of the POLYANTHOUS PRIMROSE.

Turkey is the native Country of the *Polyanthous Primrose*; and it there lives most freely in a light rich Soil.

Tho' a Native of a warmer Climate, it very well bears the Cold of ours, so that it never need be taken out of the open Ground; and all it requires, by way of Compost, is a fresh Earth, a little enrich'd by rotted Wood.

Let a Quantity of good Mould be taken from under the Turf in a dry fertile Pasture, and mix with it one third Part of the Earth from under a Wood-Pile: Let these be well blended together, and let them lie in a Heap, to mellow, and receive the Influences of the Rains and Air.

The common Way of Propagation, is, by parting the Roots; but we shall direct our Gardener to the better Method of raising the Plant from Seeds; allowing only of the parting of the Roots, as Occasion may require afterwards.

This is the Method to obtain new Varieties; and raising them from the finest Kinds with all the Advantage of Culture, there will be every Year a Chance of having new and finer Flowers.

To begin properly, let the Gardener trust no body for his Seeds, but save them himself.

Let him select such as are ripen'd after the finest Flowers, in his own or some Friend's Garden, in this Manner:

Let him take some Sticks in his Hand; and, examining the *Polyanthus's* when in full Bloom, let them place down a Stick, as a Mark, at each, that has a fine Flower: The Properties for this Purpose are the Strength of the Stalk, the Breadth and Number of their Pips, and their high Colour.

These being mark'd, let those which grow among them, and are of a poorer Kind, be taken up and planted in some other Place, lest the Wind should bring the Dust from their Buttons into these finer Flowers.

From Time to Time let these be gently water'd: let the Earth be stir'd about them; and if Bees are busy among them, let them be driven away, for they will bring the Dust from one

Flower to another. It is the Substance of which they make their Wax; and as they come loaded from a poor Flower, some of it may scatter into a rich one, and hurt the Seeds.

The Flowering-Plants being thus strengthen'd in their Growth, and all Annoyance kept from them, their Seeds will ripen toward the Beginning of June.

The two last Weeks in May let no Water be given them: it has serv'd to swell the Seeds; but they now have their due Bigness, and should be left to harden.

When they are ripe, the Seed-vessel will open: this is the Course of Nature for their Sowing, and let the Gardener watch it. They do not all ripen together; but he must gather them as they come. Once in two Days let him examine them, and carefully cut off such as are ripen'd.

Let him take off these, with a Part of the main Stalk, and lay them upon a Shelf in a dry airy Room, first covering the Shelf with Paper, and raising a Ledge upon the Edge of it, to prevent any of them from falling off, or any of the Seeds that drop from them.

The Seeds must not be shook out of the Heads, but these laid at a Distance from one another, to harden. No Way preserves them in their full Perfection but this; as I have found by repeated Tryal.

'Tis thus Nature manages the Seeds of Plants: they ripen in their Capsules at the due Season, and no more Nourishment is, after that, convey'd to them; but they continue there expos'd to the Air, tho' shelter'd in a great Measure from its Injuries; and are by Degrees harden'd till the Time of scattering them for their Growth, which the Winds then effect. This is the Course of Nature, and this Art should imitate.

The Seeds sav'd in June will be at the latter End of December ready for Sowing.

Chuse for this Purpose a mild open Day; and pour into a large flat Box, made of rough Boards for that Purpose, as much of the Compost as will fill it within two Inches of the Rim.

Mix up with some of the Compost, one third Part more of Earth from the Wood-Pile, and one fourth dry'd Cow-Dung rubb'd to Pieces: Blend this very well, and spread a Covering of this of half an Inch thick over the Earth in the Box.

This being ready, shake the Seeds out of their Capsules, and mix carefully with them as much Wood-ashes, and as much middling Sand, wash'd clean.

Mix this well, and then scatter it over the Surface of the Earth in the Box.

With the Remainder of the enrich'd Compost, mix some more Wood-Pile Earth; and having thus made it very light and fine, sift some of it over the Seeds, covering them about a Quarter of an Inch.

Give the Earth no Water; but set the Box in some Part of the Garden, where it may have the full Benefit of the Sun, and some Shelter from very heavy Rains.

Thus let it stand during the coldest Months; but when the Spring comes on, let it be removed

Nov. moved into a Place where it is sheltered and shaded from the Sun, except for the two or three first Hours in the Morning.

In this Manner the young Plants will appear, and come slowly and gradually forward.

When they are a little grown, they must be very gently watered at Times; and about five Months from the Time of Sowing, they will be fit to transplant.

Chuse a shady Border, and taking off the Mould four Inches deep, fill its Place with some of the Compost. In the Evening of a moist Day transplant them into this Border.

Draw Lines length-way and a-crofs of the Border, at five Inches Distance; in the Centre of each Square, made by these Lines, open a little Hole, and when all is ready, take up one by one the Plants.

Place them immediately as they are taken up, one in each Hole, and give them a very gentle Watering.

From this Time repeat the Watering every Evening for a Week, and every other, or every third Day afterwards, unless in rainy Weather, for two Months.

Once in a Week stir and break the Mould between them with a small Trowel; and if a dead Leaf any where appears nip it off.

This Management, clearing the Ground of Weeds, and enriching it by the continual breaking; will with the Help of the Waterings, bring on the Plants in a surprising Manner.

The first Week in *September*, prepare a Border in another Part of the Garden; let it be sheltered from the South Sun, but open to its Rays in a Morning.

Clear the upper Part of this as the other, to six Inches Depth; and fill up with the Remainder of the Compost.

Draw Lines length-way and cross-way of this, as of the other, but at seven Inches Distance; and in the Centre of each Square, open a Hole. Into these remove the Plants; taking them up with a Ball of their own Earth; and carefully watering them till they are rooted.

Stick up a few Furze-bushes about this Border in *October*, to defend the Plants from the Severity of the Weather, and thus let them stand till Spring.

In *March* let the Furzes be taken away, and

the Earth broken between Plant and Plant. Nov. This clears them from Weeds; and enriches the Ground. In *April* they will flower.

Their Flowers will not be so strong this as the succeeding Years, but their Kinds and Colours will be distinctly seen.

There will be many of an inferior Sort; but there will never fail to be also a great Number of very fine Ones.

Let a Stick be set down by each of these as a Mark; and let a Quantity of the same Compost be made up into a Border, in a shady Part of the Garden, where the Morning Sun comes.

This must be a Spade deep; for it is the Place where they are to remain.

When the Flowering is over, let the Stalks of these fine ones be cut off, that the Roots may not be exhausted by ripening Seeds while they are so young; and in this Border let them be planted, at a Foot Distance; taking them up a Week after cutting down the Stalks.

Water them gently till they are well-rooted, and after this they will require no particular Care.

The Earth between them should be now and then broke with a Trowel, and in this Manner they will flower in their full Glory the succeeding Spring.

Thus may a Stock of Polyanthus's be raised, that will very nearly equal Auricula's.

For their Management afterwards, no more is required than this.

Every *October*, let a fresh Quantity of the Compost be prepared as we have directed; and the succeeding *August*, let it be used thus.

Let the Border of Polyanthus's be dug out; the Roots carefully taken up and laid in the Shade: And when the Earth is carried away, let the fresh Compost be put in its Place.

Then part the Roots, and plant the strongest and finest in the Border, at the same Distance as at first; the rest in other Parts of the Garden. This will keep them in their full Beauty, and provide an annual Increase.

We shall also direct the Gardener to continue raising Seedlings: Let him save the Seed from the choicest of these Flowers, and manage the young Plants as already directed. By this Means he will continue improving his Flowers; and there is no Saying to what Excellence this Kind may be raised by such Methods.

2. FRENCH MARYGOLD.

P. XIV. Fig. 2. If there be a Plant more common in Gardens than the Polyanthus, it is this: But like all the others, it is capable of being raised to a Degree of Beauty not generally known.

We shall spare no Pains to inform the Reader what may be done to raise the Excellence of those Plants, which are the usual Ornaments of every Garden.

The Name French Marigold may lead the Stu-

dent into an Error, as to its Place of Growth.

The French taught us to raise it in Gardens; but it is a Native of *South America*, and of some Parts of *Africa*.

The earlier Writers, have called it *Flos Africanus*, and *Tanacetum Africanum*; others *Tagetes*; to which *Linnaeus* adds, as a Distinction of the Species, *Caule subdiviso diffuso*. *Tagetes*, with a subdivided and spreading Stalk. Others had called it

Tagetes

Nov. *Tagetes minor*, and *Flos Africanus minor*; but the spreading of the Stalks in this Kind, and their more erect Growth in the other, called the *African* Marigold, are much better Distinction than the Size.

The Root is formed of innumerable Fibres, joined to an oblong central Part. The Stalk is two Foot and a half in Height, weak branched, brown and spreading.

The Leaves are large, of a deep Green, and beautifully pinnated; the Pinnæ being placed on slender Ribs, and in themselves narrow, oblong, serrated sharply, and sharp-pointed.

The Flowers rising on small Stalks from the Bosoms of the Leaves, and terminating all the Branches, cover the Plant in vast Profusion; and if gathered before they fade, or set for Seed, others will succeed in greater Number, and the Plant continue flowering in all this Lustre, till the End of this late Month or longer, if Frosts spare the Root.

The Flower is large, and in its natural State single; nor is it then without its Beauty, the Colour being mixed of an extreme dark, purplish Brown, and a gold Yellow; but in the Hand of Culture the Variety is endless.

It becomes double, striped, and party-coloured: in some Plants the Petals in these double Flowers roll themselves into Quills; but this is not to be encouraged.

It is the great Beauty of the *African* or larger Kind, because that has no great Variety of Colouring; but in this the Gardener's Art should be employed to streak and stripe the Flowers; and not to twist up, but display the Petals flat or waved, to shew that singular Elegance.

To know the Class to which this Plant belongs, one of the single Flowers must be examined. In the LINNÆAN Method, this is determined by the Organs of Fructification, and these are in a great Measure obliterated in the double.

The Flower thus chosen, will be found placed

in a plain and simple Cup, formed of one Piece, and only dented in five Parts at the Edge; in this is placed the Flower, composed of Floscules of a different Form.

Those in the Centre are tubular, and those at the Edges flat or ligulated. The tubular are numerous, but the flat are naturally no more than five.

The tubular Floscules are divided into five Segments at the Rim; and within these are placed the Male and Female Parts of Impregnation, defended by a Hairiness on the Inside of the Segments.

The flat Floscules are narrow at the Base, but toward the End very broad, and these contain only a Female Part, the Rudiment of the succeeding Seed.

It is therefore in the tubular Flowers in the Centre, the Student is to search the Characters of the Class. Let him lay open one of these, and he will find in it five very short Filaments, on which are placed as many Buttons; these are oblong, and they coalesce and form a Kind of Tube.

This is the Character of the nineteenth Class in the LINNÆAN System, thence called Syngenesia.

Speaking of this before, we have explained the Distinction of the *Polygamia necessaria* and *superflua*; the various Manners of Impregnation needed in some; and as it appears useless in others.

In the central Flowers there will be found together with these male Parts, the Rudiment of the Fruit with its Style. This ripens its Seed; as well as that in the Female Flower at the Verge; therefore the Plant is one of the *Polygamia superflua*, under the general syngenesious Tribe.

The Culture of this is the same with that of the *African Marygold*, or upright *Tagetes*, next to be described; we shall therefore avoid Repetition, by delivering the Method of bringing both to Perfection under that succeeding Head.

3. AFRICAN MARYGOLD.

P.XIV. This is as common in all Gardens as the former; and in most Things resembles it; differing only as another Species of the same Genus.

The Distinction of our common Names of *African* and *French Marygold* is very idle; both are Natives of the same Countries, *Africa* and *South America*; and they are better distinguished by their Form of growing.

Our Gardeners call this the *African* or *Double African*. The earlier Writers, *Caryophyllus Indicus*, and *Tanacetum indicum majus*. The latter *Tagetes major*. LINNÆUS calls it more distinctly, *Tagetes caule Simplici erecto pedunculis nudis unifloris*. *Tagetes* with an upright simple Stalk, and with the Flowers placed singly on naked Foot-stalks.

It is an Annual, as the former, perishing with

the Winter's Frost, or sooner, if the Seed be sooner perfected. The Root has innumerable Fibres. The Stalk is upright, firm, and a Yard high, and it does not spread out into wild Branches as the other.

The Leaves are large and pinnated: Their Colour is a dusky, though not a dark Green; and the Pinnæ are oblong and sharp-pointed, somewhat broad and serrated.

The Flowers are large, numerous, naturally single, and of a pale Yellow. A richer Soil deepens their Colour; and the Advantages of farther Culture renders them double, in various Forms, and in various Tinges of their natural Dye.

In Colour they vary from the palest Lemon

Nov. to the deepest Orange, taking in all the Degrees of Yellow.

In fine, the Petals which are multiplied innumera-ly by the Gardener's Art, are rendered from their plain natural Form, waved, curled, and tubular. This last is their most beautiful Appearance; and in this Species it is greatly to be encouraged; for as we have not here the Variety in Stripes in the preceding, this beautiful Form is to be consulted; and we shall tell the Gardener how to procure it in the fullest Perfection.

To the Disgrace of Botany, TOURNEFORT enumerates all these Varieties of this and the former Kind, under distinct Names, as Species; and in Consequence they are transcribed in the same Manner into the Gardener's Dictionary, taken from that Book in all that concerns this Part of the Study.

The Sulphur coloured, and the Orange coloured *Tagetes*, are there with numerous others of the same Kind, ranged and numbered as distinct Species by that Writer; who could not but know better, because he must have seen one Seed produce them.

Let the Student be no longer deceived by these Mistakes: He knows that under whatsoever Difference Herbs will appear, which rise from the same Seed, they are Varieties and not Species.

To know the Place and Class of this Plant in the LINNÆAN System, a single Flower must be examined. This will be found in all Respects to answer the Description we have given of the Construction in the preceding Kind, for they are Species of the same Genus.

We shall not repeat those Characters, but refer to them; and having observed that the Plant is by them referred to the syngenesious, polygamous, superfluous Tribe, we shall proceed to the Culture suited to this and to the preceding; for the same Management agrees with them.

Culture of the AFRICAN and FRENCH MARYGOLD.

Every Spring these Plants are to be raised from Seed, for every Autumn the Roots die.

This must be begun early for two obvious Reasons; the bringing the Plants sooner to flower, and the keeping them alive to ripen their Seeds.

Let this be considered in the whole Management of the Plants, as the next Years Supply perfectly depends upon it.

The procuring Seeds is the first Article, and this must be done with great Care.

Let the Gardener go round his Plants when in full Bloom, and mark by Sticks those which are the finest in their several Kinds. The best striped of the *French* Marygold, and the largest and most quilled of the *African*.

When a few fine Flowers of these have been fixed upon for Seed, let all the rest be cut off in the Bud, that the Strength of the Plant be not exhausted to feed them; but all be carried to the perfecting the Seeds in the others.

No. 14.

Nov. Every Day two Hours before Sun-set, let these Plants be watered; and let them be carefully tied up to Stakes that the Wind may not rock them at the Root.

Double Flowers in general do not well produce Seeds, but this is a Method of bringing them to Perfection.

With this Care they will be well filled; strong, and full of the Principle of Vegetation.

When the Seeds are more ripened, forbear the Waterings; and let them harden upon the Plant as the Root decays. After this in the Middle of a dry Day cut the Heads carefully off; and lay them upon a papered Shelf in an airy Room, as we directed on a preceding Occasion.

There let them lie till Spring: And in the last Week in *February* let them be sowed upon a Hot-bed: This must be of a moderate Heat, and well covered with rich Garden Mould.

When the Seeds are sown, make the following Compost for the choicest of the Plants. Mix equal Parts of Earth from under the Turf in a rich Pasture, and good mellow Garden Mould: Add a small Quantity of well-rotted Dung, and to a Load of this put two Bushels of coarse Sand: Let this be mixed together, and lie ready.

When the Plants come up, let them by Degrees be hardened to the Air; and when they have grown to a Finger's Length in Height, let another Hot-bed be prepared for them.

Let this be made in some sheltered Part of the Ground, and not covered with Frames; but let Hoops be placed over it at small Distances, that a Mat or Cloth may be drawn over.

Cover this seven Inches deep with the Compost; and then drawing Lines length-way and cross-way at eight Inches Distance; open a Hole in the Centre of every Square, and carefully set in one Plant.

Water these well, and draw a Mat over the Hoops, letting it fall close at the Ends. Thus let them stand at first till rooted, then by Degrees raise the Mat in the middle of the Day, and harden them gradually.

The common Errors of our Gardeners, is, that they keep these Plants too close: They by this Means draw them up in an ill Shape, and subject them to be stunted when brought out into the open Air; the Change being too violent.

In this Method they will go on gradually, and become inured to their proper Situation, without any Violence; the Heat of this Bed will decrease as they grow up; and they will be Day by Day more and more exposed, till in the middle of a warm cloudy Day, the Mats are wholly to be taken off, and put on no more.

From this Hot-bed they are to be removed into the Places where they must remain.

The common Practice is to plant them from this Hot-bed into the Nursery: And so the common Writers direct. From thence they are to be brought into the Garden, as soon as it is discovered which will have double Flowers.

This Removal at the Time of flowering, I have found always hurts the Plants greatly, tho'

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Nov. done with ever so much Care: therefore the Method I have practis'd has been the same I mention'd on a preceding Occasion, of planting two where I intend one to remain. By this Means I have been able to shew such Flowers, even in this common Plant, as have surpriz'd those most us'd to Gardening.

To proceed in this Method, as soon as the Plants are ready for Removal, open Holes in the Borders where they are to stand, throwing off the Mould, not laying it up at the Edge.

Make two of these Holes in each Place, near one another; and bringing in two of the Plants, set them upright, one in each Hole, and fill up with the Compost instead of the common Mould, drawing a little of the common Mould over it, that the Border may be all of one Colour.

At the same Time have ready ten or a dozen Pots; and adding to the remaining Compost a good Quantity of Sand, and a little common Salt, stir all together.

Water the Plants carefully, and they will soon be well rooted, and make their Shoot for flowering.

Notwithstanding the Seed were all from double Flowers, there will be many single; let these be pull'd up and thrown away.

Nov. Where one of the two Plants in a Place is single, and the other double, the single one being taken up, there remains the other for flowering; and no more Trouble is requir'd.

Where they are both single, both must be pull'd up; and one, from some Place where both were double, planted in its Room.

There will still remain some Places where both the Plants are of the double Kinds: one from these must be potted. Fill the Pots with the last-nam'd Compost, and plant in each one of these superfluous double Plants.

All being thus dispos'd, let the Gardener go his Rounds, and carefully thrust into the Ground, near each, a short firm Stake. Let it stand above the Ground half the Height of the Plant; and, tying the Stalk carefully to it, let it remain covered by the Leaves.

Let this be done in the Pots, as well as to those planted in the Borders; and thus they will be secured from the Winds.

After this, let all the Plants be water'd every other Day, toward Evening, and they will flower in full Perfection. Those in the Pots will be the smallest Plants, but they will often produce the finest Flowers.

4. INDIAN NASTURTIUM.

P.XIV. This is a bad Name for a very beautiful and Fig. 4. useful Plant, but the Gardeners know it by no other. We have represented it in the Figure in its single and double State, at once to explain its Construction in the natural Flower, and the extreme Beauty it receives from Culture.

Not the Vulgar alone have mis-call'd this Plant. BAUHINE, a Name of establish'd and merited Reputation, stands to the same Title; and others have call'd it variously.

HERMAN has nam'd it *Viola inodora*; FÆVILL, *Cardaminum*; and BOERHAAVE, *Acriviola*.

The Name now receiv'd is *Tropæolum*; and LINNÆUS adds, as a Distinction of the Species, *foliis peltatis orbiculatis: Tropæolum*, with rounded and peltated Leaves.

This Term expresses those Leaves in which the Foot-stalk is not inserted at the Edge, but in the Middle, so that they resemble a Shield.

It is a wild, rambling, and climbing Plant, and naturally is of great Beauty.

The Root is fibrous: the Stalks are round, weak, and of a pale green, and they spread out variously into Branches; but unless supported they cannot attain any Height.

The Leaves are very beautiful: they are of a rounded Figure, wav'd a little at the Edges, and of a pale and pleasing green. In the Centre, on the upper Part, is seen the Place of Insertion of the Foot-stalk below; and from thence run the Fibres.

The Flowers cover the Plant in great Profusion, rising from various Parts of the Stalks and Branches; and they are in the single or common State very beautiful: their Size being considerable, and their Colour a fine yellow.

When double, they become yet more beautiful: the Petals are extremely numerous, and finely ting'd with yellow, and with Orange-Colour.

To know the Class of the Plant, the single Flower must be examined: it stands in a Cup divided into five irregular Segments; and is itself compos'd of five Petals, with a Spur: these are broad and short, and are inserted into the five Segments of the Cup. The two upper ones adhere by their proper Bases; but the three others have long narrow Bottoms annex'd, and these are bearded in a beautiful Manner.

In the Centre of the Flower stand eight short Filaments, in a declining Posture; and upon each of these is plac'd an oblong Button, of four Cells. Amidst these rises a single Style, which has three Divisions at the Top; and the succeeding Fruit is compos'd of three irregular-shap'd striated Berries, each containing three striated Seeds.

The Singularity of this Flower perplex'd the earlier Writers where to place it; but in the LINNÆAN System there occurs no Difficulty on that Head: the eight Filaments declare it to be one of that Author's eighth Class, the *Oelandria*:

Nov. and the single Style shews it also to come under the first Section, the *Monogynia*.

Culture of the single and double INDIAN NASTURTIUM.

The Management of these differs greatly; the common or single Kind requiring little Care; and the other, to bring it to Perfection, a great deal.

For the single Sort no more is needful than to select a warm Border, where there is a dry rich Soil, and to support the Plants as they rise in Height.

No Hot-Bed is required to raise them; for tho' Natives of *South America*, they will grow on the common Ground.

The Seeds should be sown the last Week in *April*, and the Plants will flower in *July*, with no more Care than the keeping them clear from Weeds, and giving them Sticks to climb upon.

In this Manner they will flower throughout the Summer, and continue till Frosts destroy the Root.

The double Kind, which is a Plant of extreme Beauty, was first rais'd from Seeds brought from *Peru*; but it rarely ripens them here, and must

be propagated by Cuttings.

For this Purpose prepare the following Compost:

Mix of fine Mould, from a dry Pasture, three Bushels; of Wood-Pile Earth one Bushel; and of coarse River-Sand half a Bushel: let these be turn'd several Times to mellow with the Air, and then put into Pots.

Let the Pots be of a middling Size, and fill as many of them as you intend to raise Plants. In the Beginning of *June* take off as many Cuttings as you have Pots, from a vigorous Plant: set one carefully in each Pot, and set the Pot in a Bark-Bed of a moderate Heat, to promote the Rooting: water and shade them till well fix'd, then harden them by Degrees to the Air, and set them among the Green-house Plants. At the first Approach of cold Nights bring these Pots into the Stove, and continue to water them at Times.

They will grow vigorously, and the next Year will flower in vast Profusion.

Less Heat will preserve them alive; but it is thus they will have all the natural Beauty of the Flowers, which are inferior to few of any Kind.

5. GREAT ORIENTAL PERSICARIA.

P. XIV. This is a Plant that has long been conspicuous in our Gardens; and, for its Stature and Singularity, very well deserves to retain its Place.

All the Authors who have written of it, when first known in *Europe*, call it a *Persicaria*; to which the common Addition, by way of distinguishing the Species, is *Orientalis Nicotianæ folio*: *Oriental Persicaria*, with a Leaf like that of Tobacco.

LINNÆUS joins under one Head, the *Persicarias* and *Polygonums*, retaining the latter Name: to which he adds, for distinguishing this Species, *floribus heptandris digynis foliis ovatis, caule erecto, stipulis birtis*: *Polygonum*, with an upright Stalk, oval Leaves and rough Stipulæ, and with seven Filaments and two Styles in the Flower.

It is an erect and very noble Plant.

The Root is fibrous. The Stalk is green, round, jointed, at Distances, in a conspicuous Manner, and ten Foot in Height. Toward the Top it divides into numerous Branches; and, with good Management, forms a handsome Head.

The Leaves are large and very beautiful; they have short Foot-stalks rising from the Joints, under the Covert of some slight rough Films; and they are of an oblong Figure, and approach somewhat to oval; broadest at the Base, and smaller to the Point. They are of a fine green, and they are wav'd at the Edges.

The Flowers grow in long Spikes from the Tops of the Branches, and also from the Bosoms of the Leaves. They are separately small, but in the Spike they are very conspicuous: this, before the Flowers open, is of a lively red, with a

Tinge of Crimson. When they are open'd, the Whole looks considerably paler; the Buds being much more strongly colour'd than the Insides of the Flowers.

To know the Class to which this Plant belongs, let the Student take off a single Flower. Nature has oddly united the Cup and the Body of the Flower in this and others of the same Genus: they grow into one another, forming a single Substance; hence some have call'd the Whole a Cup, and others a Flower.

Together, they make one Substance; but the distinct Account is this: The Cup, uniting with the Petal, forms the lower Part behind, and is fleshy; and the Flower adhering to this, is form'd of a single Petal, divided into five Segments, which are very lasting, and it is tubular, and imperforate at the Base.

In the Centre rise seven Filaments; they are short but regular in Disposition, and are crown'd by round Buttons. From the Rudiment of the Fruit rise two short and slender Styles; and after these are fallen, the Flower, losing its Colour, performs the Office of a Capsule, as the Cup does in some other Kinds, closing on, and defending from Injuries a single Seed.

From the seven Filaments the Student will refer this Plant to the seventh Class, the *Heptandria* of LINNÆUS, and he will do right, altho' the Author himself has not plac'd it there. It stands in his Work among the *Ostandria*, under the Generical Name *Polygonum*.

This we are oblig'd to inform the Student, that he may not be at a Loss where to find the Plant: but we cannot approve it. If the Genera were sub-

Nov. subdivided and less comprehensive, these Accidents would not occur in the Science.

Culture of the ORIENTAL PERSICARIA.

This Plant, tho' a Native of a hotter Climate, lives with us freely in the open Air, and needs little Care to raise it: but tho' it requires little, our Gardeners do amiss who give it none. They are taught this by their common Instructor, who tells them, that the Seeds are to be suffer'd to fall of themselves in Autumn, and that they will thus produce much finer Plants than when sow'd. This, if it were true, would not be much to the Credit of Gardening: but it is not.

It is owing to this wild Way of Sowing, that the Plant loses its lower Leaves so early; and, with them, the greater Part of its natural Beauty. We shall direct a Method by which it will succeed in a very different Manner.

Let the Seeds be gather'd in *October*, from some fine large Heads of a flourishing Plant, and let them be scatter'd upon a paper'd Shelf, in an airy Room: there let them lie ten Days.

After this, select such Spots in the Ground as will be most proper to receive the Plant; and, on each Spot so chosen, scatter half a Dozen of the Seeds at five or six Inches Distance from one

another. Sprinkle over them a very slight Covering of Mould, and thus leave them to Nature.

Let the young Plants grow to four Inches Height, that you may perceive which is the fairest and stoutest. Pull up the rest in each Spot, and draw some Mould about the Stalk of this.

As it rises in Height, suffer a Branch to grow, as there naturally will, from the Bottom of each Leaf; but if these ramble out too far in Length afterwards, shorten them. This drawing some Juices to the Part, will keep the Plant supply'd at the Joint, and the Leaf will be fresh and vigorous; which is a great Article.

In this Manner of Management there will be, in each Spot, one Plant left, the strongest of the Parcel; and this will make its Growth without any Check; for the common Method of letting them sow themselves at random, and afterwards removing them, always hurt them.

These Plants, without any farther Care, will grow to their full Height; and make a much more beautiful Appearance than as we usually see them.

The others, if wanted, may be planted out in other Places; and it will be seen, by the Difference between them, and such as remain in their original Spot, how much this Method of Culture is preferable to the beaten Tract prescrib'd and practis'd by others.

6. SHRUBBY POLYGALA.

P.XIV. The Singularity as well as Elegance of this Fig. 6. Tree, claim the Attention of all who delight in Exotics. Most of the late Writers have describ'd it, and all under the same general Name *Polygala*, with various Additions.

Our Gardeners know it by the Name of *Tree Polygala*: and LINNÆUS adds, as its Distinction, *foliis lanceolatis obtusis caule frutescente*: Shrub *Polygala*, with lanceolate but obtuse Leaves.

Others have call'd it *Polygala Myrtifolia*; a Name given it first by COMMELINE, but improperly; the Leaves having no just Resemblance to those of Myrtle.

It is a Shrub of six or eight Feet Growth; and spreads, when the Gardener permits it, with a very pleasing Wildness.

The Root is branched, and yellow within.

The Stem is covered with a greyish Bark, and the young Shoots are greener, or sometimes of a purplish brown.

The Leaves hang with a very agreeable Freedom from all Parts of the young Shoots, and usually are tufted toward the Top. They are oblong, and undivided at the Edges, blunt at the End, and of a pale but pleasing green.

The Flowers are numerous, and when fully open they are very pretty; but when shut, they are, in a general View, lost among the Leaves. Their Colour on the Outside being a whitish green, though within they are of a most delicate Purple.

To know the Class of the Shrub, these must be distinctly examined; and there is in them a Prettiness which will render this an agreeable Labour.

The Cup in which each stands is of a singular Figure; three Leaves compose it; and of these two stand below the Flower, and one separate above it.

The Flower itself is form'd of three Petals, and decorated with a kind of Pencil at the Verge. It resembles, in some Degree, the *papilionaceous* Kinds, and has the Alæ or Side-Petals large, and the Carina, or lower one, hollow'd and decorated in this singular Manner.

In the Centre of the Flower rise eight Filaments, which are form'd into two Bodies at the Bottom, but are all free at their Tops, and crown'd with roundish Antheræ. In the Midst of these is plac'd the Rudiment of the Fruit, and from this rises the Style, which is single.

The succeeding Fruit is a dry Capsule.

The Student, initiated now into the LINNÆAN System, will find no Difficulty to understand to what Class this Shrub is to be referr'd. The Seventeenth in the LINNÆAN System comprehends those in whose Flower the Filaments form two distinct Bodies; and this is of their Number.

This *diadelphous* Class is divided into Sections, according to the Number of the Filaments; that altho' in other Cases the Character of a Class being here only the Mark of a subordinate Distinction.

The first of those Divisions in the present Class, contain the *Hexandria*, and the second the *Ostendria*.



*The Polyanthus
Primrose*



Double French Marigold



*Single
Indian
Nasturtium*



Double Indian Nasturtium



*Double African
Marigold*



*Great Oriental
Persisaria*



Shrubby Polygala

Nov. *dria*, or those with eight Filaments, to which therefore this Plant belongs.

Culture of the SHRUBBY POLYGALA.

This Shrub may be propagated by Cuttings; but the best Method is to raise it from Seeds, for they ripen very well some Years with us; and would much oftener under better Management.

It is a Native of *Africa*, and there thrives in the burning Sands. This should be our Direction for its Culture; and this we should regard; not their Instructions who direct for it a rich Earth.

In such a Soil as suits it, the Shrub produces Abundance of Flowers; and, if it be allow'd Air and Waterings, will very well perfect its Seeds.

The Soil I have found best agree with it is common Mould, taken from under the Turf in a dry and not very rich Pasture, mix'd with one third Part the Quantity of Wood-Pile Earth.

Let these be thrown into a Heap, and lie all Winter.

In Autumn, let some Seeds be carefully gather'd as they ripen, and spread upon a paper'd Shelf to harden. Then let them be put up in a Paper, and kept till Spring.

In the Beginning of *March* fill a Couple of moderate Pots with the Compost; scatter on the Seeds not too thick, and cover them with a Quar-

ter of an Inch of the same Soil: give the Whole a very gentle Watering, and set the Pots up to the Rim in a Bark-Bed of moderate Heat. Here let them stand, gently watering them, at Times, with Water that has stood a Day and Night in the Stove; and watch the coming up of the Plants.

They must have a little Air allow'd them, and with it very gentle Waterings, as they rise in Height.

When they are two Inches high, they must be transplanted into separate Pots.

Provide as many of these as you intend to raise Plants, and fill them with the Compost. Into each of these set one of the young Plants, letting it in with Care. Give them a gentle Watering, and set them up to the Rim in the same Bark-Bed.

Shade them and refresh them daily with a little Sprinkling, till they have taken Root; and afterwards inure them by Degrees to the Air and Sun.

About *Midsummer* set them out among the Greenhouse Plants, and give them the same Treatment with the rest; and at the Approach of Winter, take them in.

The succeeding Spring let them be remov'd into larger Pots, and treated in the same Manner; and in these they will flower profusely that Summer, and during a good Part of the Winter.

Nov.



C H A P. II.

The Management of the Flower-Garden and Greenhouse for the latter End of November.

WE have directed the Gardener to nurse up the latest Flowering-Plants, and force them by every Art to continue their valuable Tributes. Several will in milder Years, under this Management, continue yet to decorate the Borders; others will be failing, and others wholly past it; for this is a very late Season for yielding any thing.

Those which are past flowering, must be this Week cut down; those that are weak must be reduc'd in Quantity, by shortening the Branches; and encourag'd to shoot out more Flowers, by breaking the Earth about them; and such as continue flowering tolerably well, must have the Flowers constantly taken off as they begin to fade, that the new ones may have better Nourishment.

This done, let the Borders in which they stand be rak'd over; and they will thus have all the Beauty of which they are capable, Cleanness and good Culture.

The Seedlings of the tenderer Kinds will now require all the Assistance of the Sun's Heat, and all Defence that can be given them from Frost, without excluding the Air.

Let the Boxes, in which they are sown, be plac'd where all the Mid-day Sun comes freely to

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them, and let them be screen'd on every Part whence a cold Wind can blow.

If any Moss appear upon the Surface of the Mould, or upon the Edges of the Box, let it be carefully pick'd off; and, if the Frost prove, as now, very severe, drop a little long dry Wheat-Straw lightly upon them. This will break the Power of the Winds, and keep off the Severity of the frosty Air; but it must be taken off again when the Weather breaks; for it would be as great an Injury to choak as to expose them.

The Beds, in which are Roots of *Anemonies* and *Ranunculus's*, for flowering, must be arch'd over with Hoops; and, when the Frost sets in hard, Mats must be drawn over them.

These must be taken off when the Weather is milder; for Air is as essential to them as Frost is dangerous: they must be kept always in Readiness however, to draw over the Hoops again; for in Case of heavy Rains, they are as much needed as for the Shelter against Frost: the Wet being, when excessive, as dangerous as any thing.

These Things done, let the Gardener go over the whole Ground with an Eye of Cleanliness; and wherever he sees a dead Leaf, pick it away,

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Nov.

or a decay'd Branch, take it off; after this he should stir the Ground along the Borders, and give the Whole an Aspect of Regularity and good Management.

This Care being taken of the open Ground, we shall walk with him into his Greenhouse, there many of his greatest Treasures are deposited; and there his Diligence and Care are more required at this Season than elsewhere.

All the Green-house Plants are now in; and when he sees them together, he will be able best to consider how he shall dispose them to Advantage.

This is a Consideration of some Importance; for they are to remain many Months in their Places, and all that Time will be a great Amusement to the Owner.

The common Direction is, to place the tall ones at the back, and the lower all the way down in front; but this is a rude Manner of Instruction.

In such a Disposition, where there had been no other Care, the prim Regularity would displease a judicious Eye; and the Pains taken in raising many of the most curious Plants, would be lost by their being obscur'd among others.

As a great Part of these are to be plac'd on Supports, those should be adapted to peculiar Occasions; and the most elegant and curious Things should be set in the most conspicuous Manner, without their appearing to be forc'd into such Places.

With Respect to the Number of Plants, which is the first Article to be consider'd, let that be suited to the Extent of the Building; and of the two Extremes let it be rather too small than too great for the Space.

This depends upon two Principles: That the Plants are best seen when they are least crowded; and that they thrive best where their Branches do not interfere with one another.

For this Reason, when the Plants are increas'd either by fresh Additions from Abroad, or by Propagation, let as many be taken away as are admitted fresh; or let the Building be enlarg'd.

We will suppose the Number too great for the Place, which is the Case, at present, in most Gardens: let the Gardener represent this properly to the Possessor, and make his Computation how many it will bear.

Having fix'd the Number that must be remov'd, let him take away so many Pots of Duplicates, and of the weakest and least handsome Plants; and set them under any Kind of Shelter out of the Green-house. If they perish, it is better than to save them, by taking them in, for there they would hurt the general Appearance, and damage one another.

A very great Article in a Green-house, is the Admission of Air to the Plants; and nothing can be effectual in this Respect while they crowd one another.

Having thus reduc'd the Number to what may stand free and clear of one another, the next Article is the Disposition; and in this two Things are principally to be consulted, the shewing the

best Plants to the most Advantage, and the giving a pleasing Variety of Aspect to the Whole.

Nov.

Let the choicest Plants be first set by themselves, that the Number may be known, and then let the Parts of the Greenhouse, where they can stand most conspicuously, be consulted: they must be set at some Distance one from another, that there may be an Intermixture of other Kinds, serving as Foils between them; and this farther Advantage will result from the same Disposition, that on whatever Part of the Greenhouse the Eye is cast, there will be some Object to charm and satisfy the Attention.

These particular Plants should be dispos'd at separate Distances, backward, or toward the Front, according to their Height; and when they are thus plac'd, where those of a like Size will stand about them, they should be rais'd to some Elevation above the common Level, that they may be the more conspicuous.

This done, let the Gardener carry in his Eye a general Notion of the Height of the others; and thence begin to place them.

Let him set the very tallest on the hindmost Stands; and these not in a compleat Row, but with some of a little less Height interchangeably between; that they may represent a Range of Trees, and not a Wall.

There is in these Things no Beauty but in their Freedom, and they will represent cut Yews, not handsome Shrubs, when disposed in the common dull and formal Manner.

When the upper Row is placed, the Remainder are to come in their several Ranks; not exactly, but nearly according to their Degrees of Height.

In the placing these there is room for a great deal of Fancy: The Variety of Tincts and Shades of Green, is an Article of great Elegance; and a Painter would think himself happy in half that Choice the dull Eye of the Gardener neglects.

First let him place on each Side of the several conspicuous Plants first disposed, some one of these that has a Colour not like its own, but fittest to set it off in Picture.

Then let the rest be placed with Freedom; and though most Leaves may be called Green, yet there will be a vast Fund of Variation in the grey Green, the blue Green, the yellowish, and the silvery White mixed interchangeably among the full and fine Colour of the others.

Thus the whole Green-house is to be set in Order: And in doing this, Care must be taken that they are gradually shorter to the Front of the Room, though not exactly so, and that they stand perfectly clear of one another. They will never thrive perfectly, unless the Air come every Way between them.

The common Writers are not wholly unsensible of this, for they order all the tenderer Kinds, which require most Air, to be brought to the Front of the Green-house; and in the most popular of these, this Direction is given so often, that there would be few left for the rest of the House, nor Room for these to stand by

one

Nov. one another; we shall answer the same Purpose, by keeping them every Way free of one another, as here directed.

When the whole Number is thus disposed, let all the dead Leaves be taken off from them, or any Bough that is particularly straggling and can be spared.

Whenever the Weather is tolerably mild, let the Glasses be opened more or less, according to the Degree of Warmth, every Day about Eleven o'Clock, or earlier in a Morning, and closed an Hour or two before Sun-set.

This will keep them in Vigour.

All they will require farther will be Watering, which must be given as we have directed under the several Heads, freely to some, and sparingly

to others: But all that is done in this Matter, should be about an Hour before Noon; and always the more the Glasses can be opened, the more Water may be allowed to the Plants.

A confined Air is very bad for the Plants, but a confined and damp Air together is worst of all. This rots the Stalks and makes the Leaves fade; and this always follows when the Plants are at the same Time close shut up, and largely watered. As we direct the Management, the Steam will pass out before the Windows are shut down.

In this Manner may the Gardener put his Green-house in the best Order, and preserve it in full Beauty all the Winter.

S E C T. II.

The Business of the SEMINARY, for this Week.

THE Care of the Flower-Garden is to be repeated in this Place; and all trimmed clean and put into good Order.

Let the Gardener as he goes his Rounds in doing this, mark the Condition of his tenderer Beds of Seedlings, and new planted Shrubs; and wherever he perceives Danger, double his Care for Preservation.

Let him drive in his Stakes, if any be loose; and if he thinks any Tree in particular endangered by the Frost, lay some Haulm of Pease or Beans to a good Thickness about the Stem, and

four Feet every Way round it.

Let him see that there be no Breach in the Fence, or any Way for the sharp Winds of the Season to come in; and let him, as the Weather is more or less severe, put on or take off the Mats and Cloths from the Hoops, that we have directed him to place over his Seedling Beds, as in the Flower-Garden.

This will be all the Care that is needed for the present Week; but let him neglect no Part of this; for if he should, his former Labour will prove of little Service.

S E C T. III.

P O M O N A, or, the Fruit-Garden.

IF the Frost proves severe this Week, nothing can be done in this Part of the Ground: But if the Weather be milder it is a very proper Time for refreshing the Earth in which the Roots of Fruit-Trees spread.

This takes in a larger Extent than many imagine; and the Refreshment now proper to be given them, may be by Means of digging, or the Addition of fresh Matter; but best of all by both.

It would not be proper to dig about the Roots of Trees in extreme Frost, because the Severity of the Air would be so admitted more immediately to them; but neither is it practicable: This therefore is no Objection to what we propose.

The Ground can only be dug when the Weather is mild; and the Roots thus exposed will be covered up again, not only with their own

Mould; but with the Addition we propose, before the Frost sets in again to attack them.

To go properly to work in this Matter, let the Borders first be raked over, to take off all dead Leaves, broken Wood, and other accidental Foulnesses.

Then let there be brought on some Barrows of fresh Earth from under the Turf in a rich Pasture, and half as much Pond Mud thrown on it.

After these lay on a small Quantity of Soot and some Pigeons Dung; and sprinkle over the whole a little Brine.

When all is brought on, let the whole be stirred together with a Rake, that it may be mixed in every Part.

Then let the Gardener dig it in. The usual Way of doing this, is with a Spade; but it is

not

Nov. not the best, Experience shews that it will often greatly damage the Roots, and do more harm than the Addition good.

The proper Instrument for the Purpose is a three pronged Fork, like what the Farmers use; but as such an Instrument will serve on many Occasions as well as this, it will be proper to add it to the Number of regular Gardeners Tools, and to have it fabricated purposely.

What I have many Years used, is made in this Manner: The Handle is the same with that of the Spade, and the Iron Part is very strong; the Top is as broad as a Spade, and made Square, that the Foot may rest well upon it to press it down into the Ground, and the three Tongs are thick, scooping like a Spoon, and a little flattened.

Nov. This is the proper Instrument for digging in the Manure at the Roots of Fruit-Trees; and with this it should be well wrought and mixed with the Soil of the Bed, dug up to about seven Inches Depth for that Purpose: When the whole is well mixed, let the Border be raked over; and nothing planted upon it; that all the Strength of the Manure may go to the Roots of the Trees.

In treating in a succeeding Part of this Work, of the Soil for Fruit-Trees; we shall give Directions for peculiar Kinds of Manures suited to each, for the making of a Garden; but this Kind we have here delivered, may very well serve for general Use; and none answers better for the Refreshment of Garden-Ground exhausted by a long Growth of Fruit-Trees.



SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

WE have directed the sowing of young Sal-
letting upon Hot-beds, and let it be re-
peated this Week.

These Hot-beds must be of a temperate Degree of Warmth, and Care must be taken to give the young Growth Air, when the Weather is any Thing tolerable, in the middle of the Day.

If the Days be mild toward the End of this Week, it will be proper once again to plant some Beans, and to sow a few Drills of Pease: If they out-live the Frost, they make a good Succession.

A great deal of Care is required for the Cauliflower Plants under the Glasses. If covered too continually, they will fade for Want of Air; and if exposed to the Severity of the Season too freely, they will be nipped by it, and come to little.

Let our Gardener therefore keep the Glasses close, whenever it is sharply frosty; and let him watch all Opportunities of milder Days, and from Eleven to Two, raise them more and more according to the Season; thus he will keep them not only alive but healthy.

Every Thing is now bare and naked in this Part of the Ground, except the few Spots covered with the Winter Crops; let him therefore take this Opportunity of looking after Snails, Nests of Caterpillars, and other Devourers; there is nothing to hide them from his Search, and they are in no Condition to escape him.

On the Tops of the Branches in his Hedges, and on many Trees that are about the Place, he will see Bags like Cobwebs: These are the Nests of Caterpillars; that will the next Year eat his Cabbages and other valuable Products; let him cut them off, and burn them.

Snails are now got into their Winter Shelter, in Holes of Walls, and under Logs of Woods, and in all Kinds of Crevices; let these be picked carefully out of their Holes, and every Hedge and Pale searched for them.

It is a Business that must be done, and there is no Time so proper for it, as when it interferes with no other.

The Ground being thus cleared, the Gardener may leave it for the present.

E D E N:

E D E N:

A

COMPLEAT BODY of GARDENING.

NUMBER XV.

For the first Week in *DECEMBER*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. VIOLET MIMULUS.

Dec.
Pl. XV.
Fig. 1.

THIS is a very singular as well as beautiful Plant; and one considerable Recommendation of it is, that in a Greenhouse with moderate Care, it may be kept flowering in all its Glory to the present Season.

Many of the late Authors have named it, but till of very late Time, its true Genus was not established; 'tis therefore we read of it under such various Denominations. GRONOVIVS has called it *Lyfimachia galericulata*. --- BOERHAAVE, *Gratiola Canadensis*. --- And MORISON and RAY, *Digitalis perfoliata*.

It is of a Genus distinct alike from all these, and is a single Species.

LINNÆUS calls it *Mimulus*; and as there needs no specifick Distinction, adds none.

It is the joining Plants under the same Name, which have sufficient Characters for the establishing distinct Genera, that has so lengthened the Names of Species, to the Reproach of modern Botany: The Conduct of LINNÆUS in this Instance, shews how that Practice may be avoided.

The Violet Mimulus is a handsome Plant of regular Growth, and of a lasting Beauty.

The Root is formed of many Fibres connected to an oblong Head.

The Stalk is round, purplish at the Bottom, and toward the Top whitish, with some Green.

The Leaves are of a beautiful Shape and Colour.

Dec.
They are oblong, broad at the Base where they encompass the Stalk, and sharp at the Point: of a fine strong Green, and not serrated at the Edges.

The Plant unless spoiled by a too luxuriant Culture, does not send out many Branches, so that its Flowers regularly and beautifully rise on long Foot-stalks from near the middle, to the Top.

These are large and of a very glorious Colour, a violet Blue sometime tinged with reddish: and each of them is succeeded by an oval Capsule in which are many Seeds.

To know the Place the Plant claims in the LINNÆAN System; this Part, as well as the Flower, come under Consideration.

Let our Student take off a Flower, and he will find it placed in a small Cup of a singular Figure, formed of one Piece, but folded in five Ridges, so as to appear pentangular; and broke into five Points at the Edge.

The Body of the Flower consists but of one Petal, and it has a gaping Aspect. The tubular Part is gradually expanded, and at the Verge opens into a considerable Breadth, and is cut rudely into two Lips.

The upper one is split at its Top and turns back at the Edges: The lower Lip is broader, and is divided into three rounded Parts. And

X x

21

Dec. at the Base of this Lip there appears a swelling Palate.

When the Flower first opens, these Parts are confused, and when it begins to fade, they in some measure lose their Form: 'tis when it is just in Perfection, they are to be seen regularly; and the Flower is then very elegant, as well as peculiar in its Form.

The peculiar Structure of the Flower being thus understood, let it be torn open with Care, to see the Parts of Fructification; these are four Stamina or Filaments, and a single Style.

Let not our young Botanist be hasty thence to refer it to the *Tetrandria Monogynia*. This would be its Class and Section, if the Filaments were equal in Length; but he will see two of them are larger than the others: This throws it into the *Didynamous* Class, and there the Style does not mark the Sub-distinction.

Two Sections receive these *Didynamous* Plants, the one containing those whose Seeds remain naked in the Cup; the others those which have them in a Capsule: the Term for this is, *Angiospermia*. 'Twas therefore we remarked the Capsule, as a Part of the Plant's essential Character; and thus we find its Place to be among the *Didynamia Angiospermia*.

Culture of the MIMULUS.

It is a Native of *North America*, a Climate as severe as ours; and may therefore be raised with us in open Ground: but we prefer a different Culture. The Borders of a Garden are over enriched for it, and where its Roots have too much Room, the Plant spreads into many Branches.

Its Beauty depends upon the nursing it up in a single erect Stem, and covering the Top of that with Flowers.

To this Purpose, let the following Method of Culture be observed, according to which it will

rise as in the natural Way: let it also have that Kind of Soil in which it thrives best in *America*; and it will flower in all its Glory, because rescued from the Checks and Shocks it receives, in the Gardener's Practice of Removal.

Let Seeds be procured if that can be done, from *America*; if not let them be carefully taken from Plants growing here. Let them be saved from Flowers that opened in the beginning of *October*, and carefully hardened on a Shelf in an airy Room.

Let four Pots of a middling Size be filled with Earth, taken from under the Turf in an upland Pasture, without any Addition. Set these in some Part of the Garden, open to the Morning Sun, and defended from cold Winds; and in the beginning of *December*, scatter upon the Surface a few of the Seeds. Sprinkle over them a very light covering of Earth from under a Wood-pile, and thus leave them to Nature.

In Spring there will be seen several young Plants in each Pot: having been born as it were in the Severity of Winter, they will defy the Cold of Spring, and when the Air begins to be warmer, they will shoot up apace.

When these have some little Height, let the strongest Plant that stands near the middle of each Pot be marked, and carefully draw up all the others; these may be planted in common Ground to take their Chance; and the rest must be left one in each Pot to rise gradually.

In Summer let them be set out among the Green-house Plants, and let them have but little Water; this will keep them from growing too large; and will keep back their flowering for that late Season, when they will be most valued.

At the Approach of Winter let them be taken into the Green-house, and when the Top Flowers are past, let those be taken off and not left for Seed; and thus it will continue a long Time in renewed Beauty.

2. B R O A D - L E A V E D P A N C R A T I U M.

P. XV.
Fig. 2.

This is a Plant of very great Elegance, and is an Ornament of the first Kind to the Stove, at this Season.

Those who have had Opportunities to see the *Amboyna* Plants, describe it, but under various Names. RUMPHIUS, calls it *Allium Amboinense*, or *Cepa Amboinensis*; and COMMELINE, *Narcissus Amboinensis*. The first Glance shews how improper both these Names were; but till LINNÆUS, none told us what to call it in more correct Expression. That Author has distinguished the bulbous Genera by certain and invariable Characters, and he refers this Plant to the *Pancratiums*; adding as its Distinction from the others, *Spatha multiflora foliis ovatis nervosis*, many flowered *Pancratium*, with oval, high-ribbed Leaves.

The Root is bulbous and of an oval Form,

white, insipid, scentless; and sends from its Base a few thick Fibres.

The Leaves are very beautiful, three or four, rarely more, rise from each Root, and they have long Foot-stalks, which when the Plant is healthy are of a fine Purple.

The Leaves themselves are of a pale, but elegant Green; their Form is oval, and they terminate in a Point. Their Ribs are high, conspicuous, and in the full Vigour of the Plant, are tinged with a faint Purple, they follow the Form of the Leaf, and at the Extremity unite in one common Point. They are juicy, and to the Taste insipid.

Among these Leaves rises the naked Stalk, Purple at the Base, Green upwards, strait, round, firm, and two Feet high. From its Top

burst

Dec. burst a Number of large Flowers, each on its separate Foot-stalk, spreading into a very noble Tuft.

Their Bigness makes them very conspicuous; their Number more, and most of all their Colour, which is a pure and glossy white. This is their full Recommendation, for they have no Smell. The Seed-vessels that follow, are oblong, and have three Ridges.

To know the Class to which this Plant belongs, let a separate Flower be examined: the Characters are mark'd so obviously, that none can mistake them.

Six Filaments disclose themselves in a very conspicuous Manner in each Flower, terminated by gold yellow Buttons, which add not a little to its Beauty. These shew the Plant to be one of the *Hexandria* of the LINNÆAN System, a Class that comprehends most of the bulbous Kind.

In their Centre stands a single Style, and this determines, in the same obvious Manner, the Subdivision, making it one of the first Section in that Class, the *Monogynia*.

The whole Tuft of Flowers has a common Cup or Scabbard plac'd at the Top of the main Stalk, where their several Footstalks rise: this bursts, to give them Leave to spread, and soon after fades.

The Flowers retain their Lustre and Perfection a very considerable Time; and after this the Stalk should be cut down, for the Seeds will not ripen well in *England*; and the suffering them to remain upon the Plant, exhausts the Root to no Purpose; and hurts the next Year's flowering.

Culture of the BROAD-LEAV'D PANCRATIUM.

The Propagation of this Plant is best accomplished by parting of the Roots, when the Off-sets are sufficiently grown for such a Separation; and the best way of obtaining it first, is from the natural Place of its Growth.

There the Roots should be taken up as soon as the Leaves decay, and planted as we shall direct when they arrive in *England*.

Whether these full-grown Roots be procur'd, or the Off-sets nurs'd to flowering, the Method of their Management must be the same: the Heat of a Stove is requisite for bringing them to their full Glory; but less Heat will keep them alive, and bring them to a more imperfect Condition of flowering.

The Plant is a Native of the *East-Indies*, and some other of the warmer Parts of the World, and there flowers in mellow Soils in *November*.

Where it succeeds best, the Mould is found at once rich and loose: 'tis so in *Amboyna*, where it glows in all its Pride.

A black Mould, mixt with a large Portion of a coarse whitish Sand, is there its most frequent Nourishment,

This is a Soil we have not naturally either in Gardens or in Fields in *England*; but Art may easily imitate it; and it is to this careful Mimickry of Nature the Gardener will owe the fullest Glory of his Exotic Plants.

For the Reception of this let the following Mixture be prepar'd:

Put together one Barrow of black Mould, from under the Turf in a rich damp Meadow; the same Quantity of Pond-Mud, and half a Barrow of the largest Sea-sand.

Stir and mix these well, and leave them some Time to the Air.

When the Roots arrive from the *Indies*, or when Off-sets are obtain'd from such as are kept here, let there be as many Pots prepar'd, as there are of either.

Let these be of the middling Size; and first put into them some broken Tiles or rough Stones, that the Opening may be kept free for the Discharge of Water; for if that should be stop'd up, and the abundant Wet detain'd, it would destroy the Roots.

Then put into each Pot as much of this Compost as will half fill it: or according to the Bigness of the Roots or Off-sets, more or less Mould must be put in: let the Root be carefully plac'd in this with its Bottom level downwards; and pour in more of the Compost about it, till it is covered half an Inch. Then sprinkle over the Surface a very little Water.

Thus proceed with all the Pots; and when the Roots are so planted and settled, set the Pots in a warm shelter'd Place; and when the Earth grows dry in them, give them a little more Water.

Thus they may stand till toward Autumn; and the Leaves will, by that Time, begin to appear. They must then be taken into the Greenhouse, and water'd somewhat more freely; and after that into the Stove, where they must be set in a Bark-Bed of moderate Heat, and water'd at Times, to promote the shooting of the Stalk.

They will thus come into Flower the first Year, if brought in tolerable Condition from Abroad. This was the Method us'd by COMMELINE, who receiv'd from *Batavia* the first Roots of this Plant that came into *Europe*, and saw them flower in the full Lustre of their native Country.

If they were Off-sets that were thus planted, they will not flower till the second Year.

The Time of Stove-Plants sending out their Flower-Stalks, may be hasten'd or retarded by the Difference of their Management.

If they be water'd too freely in the Beginning of the Summer, they will flower much before their natural Time, but they will have less Beauty. This is an Error against which it is very needful to caution the *English* Gardener.

Dec.

Dec.

3. COMMON ARBUTUS.

Pl. XV. Few Gardens are without this beautiful Shrub,
Fig. 3. which all the Year shews its most elegant Leaves;
and at this dead Season is naturally in a State of
continu'd Beauty; retaining, if rightly manag'd,
its singular Fruit and Flowers against the most
fierce Attacks of Winter.

All know the Shrub; and most have treated of it
under the same Name, *Arbutus*; to which LINNÆUS
adds, as the Distinction of the Species, *caule erecto
foliis glabris serratis, baccis polyspermis: Arbutus*,
with an upright Stem, with smooth serrated
Leaves, and with a Fruit containing many Seeds.

Our common People call it the Strawberry,
from the Resemblance its Fruit bears to the com-
mon Strawberry: and it is a singular Perfection in
the Shrub, that, like the *Hesperian* Trees in
warmer Climates, this in the bleak North, and in
the severest Season is thus covered profusely both
with Fruit and Flowers.

So slow is the Growth of this small Fruit, that
from the Winter of the last Year it has been, till
the present, arriving at its Perfection; and the
Shrub bears at the same Time, that hangs upon
it in its ripe State, those fresh Flowers which are
to give Birth to that of the succeeding Winter.

All the Year it retains its Verdure; and we
have no Tree of those which endure the open
Air, that so much brings the Summer to our
Minds in Winter.

It is naturally a handsome spreading Shrub,
but may, at the Pleasure of the Gardener, be
rais'd into a middling Tree: against this Reason
however absolutely declares. 'Tis one of those
Plants which bear a near Inspection; and whose
Beauties are lost at more Distance.

Those which have larger and more specious
Leaves and Flowers, should be train'd up to
Height; this should be kept to such a Stature,
that every Eye may see for what it is respected.

The Root spreads far, and sends its Fibres
deep beyond that superficial Mould on which
Frost operates, and this is one Reason of its per-
fecting its Fruit at so dead a Season, and retain-
ing its Leaves thro' Winter. The natural Thick-
ness of its Juices helps also to that Purpose;
and to their sluggish Course, the Consequence of
that thick Substance, is owing the vast Length
of Time requir'd to ripen the Fruit.

The Bark of the Trunk is of a deep brown;
that of the Branches paler, and the young Twigs
are often purplish.

The Leaves are oblong, and of a Form ap-
proaching somewhat to oval.

Their Colour is a deep but not unpleasant
green; and their Edges are, in a most regular
and elegant Manner, serrated: Art never attain'd
a comparable Exactness or Proportion.

The Substance of them is firm and hard; and,
as they decay, frequently they acquire a scarlet
Colour, which is very pleasing.

The Flowers are more considerable for their
Form, than Size or Colour: they are small, and

of a greenish Hue, naturally diversify'd a little
with white, and sometimes ting'd with purplish.
They are hollow, and, as it were, blown up; and
at their Rim are dented.

The Fruit which follows these so slowly, is,
when ripe, of the Bigness and Form of the com-
mon Strawberry; but its Seeds are within. Its
Taste, to *English* Palates, is austere and raw; but
in *Ireland*, where the Shrub is native, it attains a
better Maturity, and is sometimes eaten.

To know the Class in the LINNÆAN System,
let the Student take off a single Flower. The
first Observation will shew him that it is plac'd
in a Cup, form'd of one Piece, and divided at the
Edge into five Segments.

The Body of the Flower is form'd of a single
Petal; and it is hollow and of a somewhat oval
Shape: its Verge is divided into five small ob-
tuse Segments, which naturally turn back.

The Flower being torn open, there appear ten
Filaments; they are short, small, and somewhat
swell'd: the Flower is flattened at its Base, and
these rise from the Verge of this flat Part.
They are not more than half so long as
the Body of the Flower. The Style, which
rises singly in the Centre of these, is longer
than they are, and has its Rise from the Rudiment
of the Fruit.

This shews the Class to be the Tenth of LIN-
NÆUS, the *Decandria*; and that its Place is in the
first Section of that Class, the *Monogynia*.

Culture of the ARBUTUS.

No great Art is requir'd to bring into the Gar-
den, or maintain in it, a Shrub which is a Native
of our own Kingdom; and bears the bleak Cold
of our Northern Mountains unhurt, and in its
full Vigour.

The common Way of propagating it, is by
Layers; but it is far better to raise it from Seeds.
These should be taken carefully from the Fruit
when fully ripe, and laid to dry upon a paper'd
Shelf.

Let the Gardener see that he chuse the ripest
Fruits for his Seed, and let him take it from such
only as grow upon a flourishing Tree.

When he has harden'd it upon the Shelf, let
him dry and sift some common House-Sand, for
the preserving it during Winter.

Let a small Box be prepar'd, and sift over the
Bottom of it two Inches Thickness of this dry
Sand: then throw on the Seeds, and sift over
them two Inches more of the same Sand: set by
the Box, and let it stand by the Winter.

In the Beginning of *March* sift away the
Sand, and the Seeds will be in a perfect good
Condition for Growth.

Fill a Couple of Garden-Pots with fine fresh
Mould, from under the Turf in a good Pasture,
and upon the Surface of this scatter the Seeds,
covering

Dec. covering the Mould in each Pot with them, at about an Inch Distance.

Sift over them a Quarter of an Inch of fresh Mould, and then give a very gentle Sprinkling of Water that has stood in the Stove.

This done, set the Pots up to the Rim in a Bark-Bed of a moderate Heat, and shade them.

The Plants will appear in about eighteen Days; but the exact Time is not certain.

From their first Appearance they must be, at Times, gently water'd, and harden'd by Degrees to the Air.

Let the Gardener now consider how many he intends to raise; and selecting the strongest and the best looking among them to this Amount, let him pull up the rest in each Pot.

This will give them more Liberty: they will thrive visibly upon it, and the Waterings must be continued.

About the End of May they will be fit for transplanting into separate Pots.

Let these be fill'd with Earth from a dry Pasture, and a little from under a Wood-Pile.

Let one Plant be carefully set in each Pot; and when the Earth has been fix'd about their Roots, and drawn up a little about their slender Stems, they must have another gentle Watering, and be again set into the Bark-Bed. This will greatly promote their Rooting.

They must be shaded till well fix'd in the new Pots, and every Night gently water'd: when they appear perfectly well recover'd from the Check of their Removal, they must be harden'd again, and us'd to the free Air, by opening the Glasses; and afterwards set out among the Greenhouse Plants.

At Autumn they must be taken into Shelter with the rest, and remain hous'd thro' the Winter. This is the only Time of their Danger. While young, I have found them very subject to Damage from Frost; but afterwards they bear it perfectly well. Some of the extreme Branches will perhaps be hurt afterwards; but very rarely the whole Shrub.

When the young Plants have been thus brought thro' their first Winter, they will with less Care stand all the rest.

In the Middle of April let the Gardener fix upon the Spots where they are to stand; and in the Evening of a warm showery Day, let him open the Holes for them.

Let him throw down at the Edge of each Hole, some fresh Earth from a Pasture; and then loosening the whole Ball of Earth from the Bottom and Sides of the Pot, let him take it out unbroken with the Plant in it; and setting it upright in the Hole, fill it up with the Earth carefully, and give a moderate Watering.

The *Arbutus* roots but slowly; but this Way it will not feel the Check, or need so much as shading.

The two succeeding Winters, let these young Trees be defended, as we have directed for all tender Shrubs, against the Severity of the Frost; and from that Time they may take their Chance without Danger, as others.

We laugh at the meaner *Irish* for calling the Fruit Tree-Strawberries, and eating them; but the People of warmer Climates, in earlier Time, appear to have understood them as a principal Article of natural Food: and they have there no better Taste.

The *Greeks* and *Romans* name the Shrub universally the *μεμικυλον* of the former is the Fruit of this Tree; and both they and the old *Romans* make the Diet of Nature, in their several Countries, to have been this Fruit, the Beech Mast, and Acorn.

Lucretius names, in this Sense

— *Quæ nunc hyberno tempore cernis
Arbuta Phœnicio fieri matura colore.*

And Ovid talking of the same kind of Food, names his *Arbutos fetus montanaque fraga*.

This has occasion'd the Shrub to be so often mention'd by the Poets; who, with all their Praise, knew as little of it as those of modern Time understand of many Things they boldly mention: and this has led their Commentators into those inextricable Wilds of Dulness and Confusion.

Inferitur vero ex fœtu nucis Arbutus horrida,

says VIRGIL. How shall we make the *Arbutus* HORRID and HIDEOUS, demands this Commentator? — Because, replies RUÆUS, it has very few Leaves: him we may send to School to the *Irish* Peasant. — Because, says MARTYN, (much to be respected for many of his Observations) of the *Ruggedness of its Bark*. — 'Tis an Antient who speaks; and let us enquire what the Antients thought of this Matter.

PLINY, treating of another Tree, says it has a *smooth* Bark like that of the *Arbutus*; and this the assiduous Compiler has translated from THEOPHRASTUS verbally.

What shall we say to this, but that the Verse does not deserve the Comment; and that few Things are more vain and idle than modern Criticism.

If it were worth a Guess, perhaps the Meaning might be found in an authoriz'd tho' uncommon Sense of the Word: QUINTILIAN supports the Use of *horridus* for *jejunus*; and the Meaning may be, the *hungry Arbutus*, from its Readiness to receive so strange a Cyon as the Walnut.

4. PURPLE SARACENA.

Pl. XV. This may, with Justice, claim the Character of
Fig. 4. one of the most singular among the Vegetable
Nº 15.

Tribe: and its Marks of Peculiarity are so obvious, that they have escap'd few who have had Opportunity

Dec. portunities of seeing the Plant. Its Leaves, long before the Flowers were seen in *Europe*, were sent over from *America* as Curiosities: with these the old *English* Botanists became acquainted, and figur'd them, tho' without any Account of the Flower. They call it, in their own Language, the strange hollow-leav'd Plant; and after CLUSIUS, who, from the imperfect Account he had been able to obtain of the Herb, suppos'd it related to the Sea-Lavender, *Limonio congener*.

We owe Credit to their Veracity, who, unlike some of later Name, thought it no Imputation to be ignorant of what they had not Opportunities to learn; and instead of inventing Figures of Flowers, left the Place vacant.

BAUHINE, supposing it of the *Limonium* Kind, call'd it *Limonium peregrinum foliis forma floris Aristolochiae*.

PLUKENET, better acquainted with its Nature, nam'd it *Bucanephyllum* — and MORISON, *Coilophyllum*.

Of later Time it has been call'd *Saracena*, after the Name of SARAZIN, a Botanist of *France*. And LINNÆUS, to distinguish this from another Species, which has larger and more slender Leaves, adds *foliis gibbis*: *Saracena*, with irregularly swollen Leaves.

The Root is divided into many spreading Parts, hung with numerous Fibres.

The Leaves that rise from this are very wonderful in Form: they are large, hollow like Pitchers, and swell'd out into a kind of irregular Bunch behind; of a firm Substance, supported by strong Ribs, and capable of holding a vast deal of Water.

They begin from a small Base, which is usually purplish; and thence enlarge by Degrees to the Place of this irregular Swelling: thence they are again contracted upwards, into a kind of Neck; and from that Part they again swell out into a broad Opening or Mouth, whose Edges stand obliquely, and are wav'd so that they resemble Ears.

If the Plant produc'd nothing more, these were enough to recommend it to every one curious in Exotics; and fully to compensate the Trouble needful to raise it; but it bears a Flower as singular as the Leaves, and extremely beautiful.

The Stalk which supports it, rises naked in the Centre of the Tuft of Leaves, and is round, upright, and two Foot high. On its Top stands a single Flower, large, open, and of a glowing Purple.

This has a double Cup; the under one is form'd of three little oval Leaves, and falls with the Flower: the upper one is compos'd of five very large Leaves, ting'd with the Colour of the Flower, and adding greatly to its Beauty: these fall also with the others.

The proper and distinct Flower of the Plant stands in the Centre of these colour'd Leaves, defended by them, and defending the Parts of Impregnation. It is compos'd of five Petals, which are broad, obtuse, and close inward toward one another.

These being separated, there appear the Filaments, which are very numerous and small; and

in their Centre, from a roundish Rudiment of a Fruit, rises a single Style, crown'd with a broad Stigma or Top: this remains upon the Seed-vessel when ripen'd, forming a very singular Covering to it; and that is divided into five Cells within.

This Examination cannot fail to acquaint the Student to which Class this Plant belongs in the LINNÆAN System.

It is one of the *Polyandria*, the Thirteenth in that Author's System; which we have explain'd at large on a preceding Occasion: and it is of the first Subdivision of that Class the *Monogynia*.

That there were two Species of the Plant, was not understood at first; and thence CLUSIUS, by whose Means we became acquainted with the Plant, suffer'd some Censure: he had receiv'd a Leaf, and a Figure of more Leaves, from an Apothecary of another Nation, CONIER, to whom it had come thro' several Hands from *America*.

Our famous TRADESCANT brought over the other Species from *America*, soon after; and the Leaves being much longer and narrower than in CLUSIUS's Figure, he was suppos'd to have given them imperfectly.

Since his Time we find CLUSIUS was right; and TRADESCANT's the other Species.

Strange as the Plant appears in *Europe*, it is frequent in *North America*, even in our own Part of it; and has, among the common People, the Name of *Side-Saddle Flower*. The Flower of the other is yellow.

Culture of the PURPLE SARACENA.

The Plant is a Native of *North America*: so there is nothing in our Climate against the raising it in the open Ground; but its natural Soil and the Condition of the Earth there, render it difficult to bring it here in Gardens to Perfection.

It grows in Bogs of a light rotten Earth, full of Wet and overgrown with Moss, and other light rooting Herbs. These are Places where it flourishes; and these are but ill imitated in Gardens.

Some may have Opportunities of trying it by the Sides of Canals, where the Earth is always wet; and if they will throw in some proper Bog-Earth into the Spot where it is planted, the Roots will succeed the better.

In these Places it will never fail to produce Leaves, which are enough to recommend it; but I have not seen it flower in any such Spot.

In the Stove I have brought it to that Perfection; and I shall give the Gardener here the Method.

Let a Parcel of young Plants be taken up in their natural Place of Growth, with a good Ball of Earth to each, and set in a Tub or Box of Mould. they must be water'd at Times, and they will thus very well keep alive during the Passage.

On their being receiv'd in *England*, let as many large Pots be prepar'd, and fill these half way up with the Earth taken from a Bog (mine was from the little Bog on *Hampstead* Heath, and answer'd perfectly well) let each Plant be set upright, with its Ball of Earth in the Pot, and fill round carefully with more of the Bog-Earth, till the Pot is full

Dec. full within an Inch and half: fill up this with rich Earth, from under a Wood-Pile, and give it good Watering. Thus let it stand the Night; and in the same Manner treat every Plant.

The next Day, when the Earth is a little sunk, lay upon each Pot, and all round the Bases of the Leaves of the Plant, a Heap of the great white *Sphagnum*, fresh gather'd from the Bog: this is a tall white Moss common on Bogs, with tufted Tops, which holds Water in the Manner of a Sponge. Pour upon this more Water, from a fine-nos'd watering Pot, and set the Pots in a warm, shelter'd, and somewhat shady Place.

Repeat the Watering every Day; and at the Approach of Autumn take them into the Green-

house.

According to the Time of the Year, the Strength of the Plants, and other Accidents, they will be fit for flowering the first or second Year.

Whichsoever it be, when they are in good Condition, in the Month of *July*, take them from the open Air into the Greenhouse; water them well; and, after a Week, remove them into the Stove. Set the Pots up to the Rim in Bark, and water them, from this Time, often, but by a little at a Time: one or more of them will thus be brought forward into a Shoot for a Stalk; and these must be carefully nurs'd for that Purpose. They will flower at the Beginning of the Winter,

Dec.

5. V A R I E G A T E D F L O W E R E D A S C L E P I A S.

Pl. XV. This is a Plant of extreme Elegance, known in very early Times, and afterwards left unobserved for many Ages, a Native of the *Indies*, and of our *American Possessions*: Its Beauty is sufficient to ensure it in this Age of Curiosity from farther Neglect.

It was one of the Plants called *Apocynum* by the Antients; and those who first restored the Knowledge of it, preserved it under the same Name.

Thus we read of it in *Plukenet* and *Dillenius*, but the more accurate Distinctions established by *Linnaeus*, remove it from that Class, and make it an *Asclepias*; adding as the Distinction of the Species, *Foliis ovatis rugosis nudis, caule simplici, umbellis subsessilibus Pedicellis tomentosis*. *Asclepias* with oval, rugged, naked Leaves, a simple Stalk, and low Umbells with woolly Foot-stalks. The Name is long, but it conveys a Description of the Plant.

The Natives of *America* call it *Wisank*, a Name our People have learned from them.

The Root is thick, and of an irregular Shape. The Stalk is firm, upright, purplish at the Base, and of a pale Green upwards, and is a little downy.

The Leaves stand in Pairs, and they are of a simple, pleasing Form, oblong, considerably broad, supported by short reddish Foot-stalks, and in themselves of a deep coarse Green, with a red middle Rib.

They are not downy, as the Stalk is, but rough upon the Surface, from their own natural Inequalities.

The Flowers are not large in themselves, but they cloathe the Top in a vast Tuft, conspicuous at a Distance by its bright Colour, and much more near from its elegant Variegations.

The outer Part of each Flower is sometimes White, but when the Plant is in its highest Perfection, it is lightly stained with Flesh-colour; the inner Part is of a glowing Crimson, somewhat tinged with a Cast of Purple.

Each Flower stands in a little Cup, formed of a single Piece, broke into five pointed Segments

at the Edge, which remains with the Fruit.

The Body of the Flower is formed of a single Petal, cut into five deep Segments, which are of an oval Form, pointed at the End, and somewhat bent.

Within these stand in each Flower five Nectaria, surrounding the Parts of Impregnation. Each of these is broad, short, and of an irregular Figure; and from its Base rises a kind of Horn, whose Point turns towards the Filaments: Within this, round about the Filaments, is placed another singular Substance of a truncated Form, surrounded by five Scales in a manner of a Case at the Sides, and opening by as many Cracks,

This is an Appendage of the five Nectaria, which though separate in themselves, may be understood as forming together with this truncated Body one great Nectarium, distinguishing the *Asclepias* from the *Apocynum*, and from all other Kinds.

Within these stand five Filaments, so short they would not be distinguishable but for the Buttons they support; and in the midst of them rises a double Germen or Rudiment of a Fruit with two Styles, so short, that like the Filaments they would not be distinguishable, but for the Tops or Stigmata they support.

The Fruit succeeding these, is a double Pod with numerous Seeds in each, crowned with Down, and a loose Receptacle.

Singular as the Structure of this Flower appears, the Class to which it refers the Plant in the *Linnaean System* is obvious; the fifth of that Author comprehends those Plants which have five Filaments, and to this it belongs.

Under the second Section of that Class are comprehended those pentandrous Plants, which have two Styles, and this is plainly also of that Number.

On this and all other Occasions, let the Student remember, that the Buttons upon the Filaments, and the Tops or Stigmata supported on the Styles are their most essential Parts; therefore though according to the Buttons and Stigmata,

Dec. mata, he must class the Plants, let the Filaments and Styles be they ever so short, or even be they inconspicuous.

Culture of this ASCLEPIAS.

The Plant is a Native of *North America*, and may therefore be raised with us easily, and kept alive with little Trouble; but though the Cold of its natural Climate makes it bear ours well, we have not the Heat: our Summers do not equal theirs.

Therefore to make the Plant flower in all its Glory, we must give it the Assistance of the Stove.

The Soil in which it is naturally found, is a loose, light, rich Mould, such as is common on the Edges of Forests, where broken Boughs and decayed Leaves have rotted upon it, and covered it from Year to Year, rendering it at once rich and mellow.

This let the careful Gardener imitate by the following Compost.

Mix a Barrow of good Earth from under the Turf in a Meadow, half a Barrow of Pond Mud, and a Barrow of rich Earth from under an old Wood-pile. Let these be well stirred to-

gether, and thrown in a Heap till wanted.

Let some of the Seeds be procured from *North America*, and Directions given that they be gathered when full ripe and sent over in the Pods.

In the beginning of *March*, sow these upon a moderate Hot-bed, and when the Plants appear, forward them by frequent gentle Waterings.

When you can see which are the strongest Plants, pull up the others, reserving only so many as you chuse to raise.

Let them stand in this Bed till they crowd one another: then take them carefully up with a little of their own Earth, and plant them severally in small Pots, fill'd with the Compost.

Give them a gentle Watering, set them in a Bark-bed, and shade them till they are well rooted.

Then by Degrees harden them to the Air, and bring them out in *July* among the Green-house Plants.

For this Year they are only to be set in the Green-house in Winter, and taken out with the rest in Spring; but the succeeding Autumn, let one or more of the finest of them be taken into the Stove, and they will then flower with the full Beauty they have in their natural Climate.

6. ALOE WITH SPOTTED TONGUE-LIKE LEAVES.

Pl. XV. Few of the Aloes deserve more than this, the Fig. 6. Attention of the Curious in Exoticks.

The Form and Variegations of the Leaves which always retain their Beauty, give it a pleasing Aspect the whole Year; and when in Flower it is extremely handsome.

COMMELINE has described it under the Name of *Aloe Africana flore rubro folio maculis albis ab utraque parte notato*. LINNÆUS more correct than all others in his Names of Species, *Aloe floribus pedunculatis, pedunculis, ovato cylindricis curvis*. Aloe with Flowers on bent, ovato-cylindrick Foot-stalks.

The Root is fibrous.

The Leaves rise from its Head in a considerable Number, and are broad, flat, thick, and ten Inches or more in Length. Their Colour is a beautiful strong Green, and they are spotted in a various and perfectly irregular Manner, on the upper and under Side with White.

The Tips and Edges of these also have their Singularity. While they are young, they are white and edged with a transparent Rim: this soon loses itself on the Edges, which grow rough and unequal, from its Fragments, but on the End of the Leaf, it remains longer.

From the Bosom of the central Leaves comes the flowering Stalks, usually there rise two of these, but sometimes there is only one; it is round, not very upright, of a greenish Colour tinged with Red, and two Feet and a half high.

This with good Culture will be loaded almost

from the Bottom to Top with Flowers, and these disposed in a very elegant Manner; they arise singly with long red Foot-stalks, of a hooped Form, so that they are brought near the main Stalk, though not to touch it, and are intermixed with a fine Irregularity one among another.

They are of a tubular Form, and their Colour is a perfect Scarlet.

They have no Cup but adhere naked to the Foot-stalk; one Petal forms each of them, and it is swelled toward the Base, smaller at the Neck, and nipped into six Segments at the Mouth; six Filaments, and a single Style are placed in it, as in the other Aloes, and this refers it to the first Section of the sixth LINNÆAN Class, the *Hexandria Monogynia*.

Culture of this ALOE.

It is a Native of *Africa*, and there thrives in the Clefts of Rocks, and in the most barren Soils. This refers its Culture to two Articles; that it be placed in small Pots, where the Root may have no more Room than in its natural Growth, and that the Soil be poor; for the rest, the Culture we have given for the other *African* Aloes, will with it.

The old Plants produce Off-sets every Season; and these are to be planted in the Manner we have before directed, and they will flower the second Year.



Violet Mimulus



*Broad leav'd
Pancratium*



Common Arbutus



Purple Sarracenia



Variegated flower'd Aesclepias



Aloe with Spotted Tongue like Leaves

Dec.

Dec.

C H A P. II.

The Care and Management of the Flower-Garden, Green-house, and Stove, for this Week.

WE have in the preceding Number, directed the Autumnal Plantation for the Flower-Garden, and it is now Time to prepare for that of the Spring.

Many Flower Roots are to be planted at that Time, and to give them the full Advantage of Culture, the Borders should be made ready to receive them now. Two Articles are to concur for this, good Digging, and a moderate Enrichment by Manure.

If the Weather be severely frosty, the Ground is too hard for the Spade, and it must be omitted till better Opportunity: but if it be a little mild and open, this is the Time.

Dig up the Borders, where these are to be planted, a full Spade deep, take out all Roots of Weeds; break every Clod, and throw up the Mould in a sharp Ridge. This exposes it to Frost, Air, and Sun, and at the same Time prevents Wet from lodging upon it.

When the Ridge is formed, sift over it some Soot, and leave it thus for the present.

From Time to Time it should be afterwards turned, but the same Form of a high and sharp Ridge, still preserved in the laying it.

This done, let the Gardener go the round of his Plants and Shrubs, and manage them according to the Season, defending them as we have already directed, when the Frosts are severe, and giving them free Air when the Weather is milder.

This is a most essential Lesson to the Gardener, but in general very ill practised: In our Gardens more Plants are destroyed by the Method used for their Protection than by the Frosts, from which so much Care is taken to defend them.

From the open Ground, let our Gardener enter his Green-house, and from thence come into his Stove. We have directed him to place his Plants in the former; and that having been done so lately, little more can be required there: but in the Stove his best Care is needful.

A slight Cast of the Eye will shew him if there be dead Leaves any where on his Green-house Plants; if any are seen, let them be picked off; and in the middle of fine mild Weather, if any such happen this Week, let the Windows of the Green-house be opened carefully in the middle of the Day.

In the Stove the greatest Attention is requisite for the Preservation of the Plants, and the keeping them in Beauty; those which we have directed to be pretend in this Manner, are Natives of Climates in which Cold is unknown; therefore

they cannot endure it; but on the other Hand, as the Heat in this Case is given by actual Fire, it would be easy to carry that too far.

A Thermometer is a common Guide, and it is a very useful one; but we shall direct the Gardener to judge by the most certain of all Rules, the Aspect of his Plants.

As the Cold now approaches to its utmost Severity, the Fire must be encreased accordingly; but as that is done, let him every Day, once or oftner, look over his Plants to see they do not suffer by one Extreme or the other.

If the Air in this Place be suffered to be too cool, the Leaves of the Plants will begin to look weak: this is the first Signal of Danger; and upon examining the Tops of their Branches, they will be found withered. If the Neglect of them continues, the Leaves fall off, the Extremes of all the Branches die; and the whole Plant soon after.

Nothing but Negligence of the most unpardonable Kind can suffer this Destruction, which comes on so gradually, and gives such plain and repeated Notice.

Upon the first Appearance of it on the Plants, the Thermometer will confirm the Suspicion; and let the Fires be gradually encreased, till the Rise of the Spirit, and the Aspect of the Plants mutually shew the Danger is over.

The other Fault of too much Heat, is the more fatal, as it bears no Aspect of Danger. These Plants Natives of hot Climes, will live in a Heat much greater than their own, and will seem to thrive in it.

A Stove that is kept too hot, will hence to an injudicious Eye, appear in the most perfect Condition of Health.

The Plants will look lively and grow freely: indeed too freely; for though it is natural and proper, that they should grow during the Winter, as we have observed on several Occasions; yet nothing is worse than their shooting too fast at such a Time.

The Degree of the Heat being thus properly managed; two Things more require the Gardener's Attention; these are the keeping the Plants clean, and the watering them.

On the first their Health and Vigour depends more than many are aware; and if it were not so, the ill Look of Plants, loaded with Filth and over-run with Insects, is very disagreeable, where Curiosity is gratified at so considerable an Expence.

Dec. Let Water be set four and twenty Hours in the Stove, before it is used on any Occasion about the Plants kept there, that it may have the due Temper and Heat of the Air in this Place.

This Week let the Gardener when he has regulated his Fire, go over all the Plants, picking off dead Leaves, and stirring the Earths Surface in their Pots. Then let him with a soft Rag dipped in the Water, clean the Stalks where they

are foul, and with a Pencil Brush dipped in the same Water clean the Leaves. Dec.

This done, let him give such as require it a gentle Watering. The more the Air is heated the more will these Waterings be necessary; but this should be done with a fine nosed Pot and a very little at a Time.

This Management will never fail to keep them not only alive, but in their Beauty.

S E C T. II.

The Business of the SEMINARY, for this Week.

WE directed some Weeks since, that the Ground in the Seminary intended to be planted in the succeeding Spring, should be dug and thrown up in Ridges.

With this the Nursery-man contents himself, and supposes he has done enough; but we shall direct our Gardener to a farther Improvement.

The Surface of these Ridges he will find mouldered by the Frost, and in fine Condition; but it is only the Surface that has yet received this Advantage. The Frosts have not penetrated the Inner Part, nor have the common Influences of the Air reached it. Let him give them Way by turning the whole Quantity; let him dig down the Ridges in a mild Day, break all Lumps, and so leave the whole exposed with a flat Surface for three or four Days; then let him throw it up into a Ridge again: and occasionally let him repeat the Operation.

Thus a careful Tillage will supply the Place of Manure, much better than it could have been done any other Way; and the whole Quantity of Mould in Spring, will be light, hollow, crumbly, and rich; fit to receive any Thing.

This done, let him look to those Pots of the more tender Shrubs, which he has set up to the Neck in the Ground.

The Danger of Frosts now comes toward its Height, let him see therefore whether this protects them: If there appear Hazard, notwithstanding this Precaution, he must bring in some long dry Straw, and drawing it in carefully between the Stems, cover the Surface of the Earth in the several Pots. This is a sufficient Guard for any Thing properly left in this Part of the Ground.

In severe Weather let the Gardener go his Rounds here, and see no Accident has disturbed or removed the Matter he has spread for Protection about the Roots of new planted Trees.

This is all that can be done if the Frost be hard; but if it be any Thing mild Weather, let the Ground be broke, and dug about the young Trees, and some fresh Mould scattered in among it.

The best Method of doing it is this, let a few Barrows of Earth from under the Turf on a dry Common, be spread over the Ground where the Trees are planted; and with the three pronged Fork which we have directed to be used for digging up Fruit-tree Borders, let it be turned up and well broken here.

The best of our Nursery-men dig between the Rows of their young Trees with the Spade; but they do more Hurt by cutting the Roots, than Good by breaking the Ground.

This Method by the Fork wounds no principal Root; but at the same Time it breaks off many of the extreme Fibres, which answers the same Purpose, with the Gardener's Method of trimming a Root for new Planting; and there is all the Encouragement for their fresh Shooting.

This taking off the extreme Fibres of Roots, when the Earth is at the same Time new broken about them, is of the greatest Service for promoting the Growth; in the Place of every one thus broke off there shoot out Numbers; and the new Soil gives them free Room to spread, and furnishes them abundant Nourishment.

This is no where more evidently seen than in the Nursery and Fruit-Garden: after this kind of Dressing, the broken Ends of the Roots are cherished by a light free Soil, and they gradually throw out new Ones; these are slowly spreading every Way, till the Warmth of Spring pushes them more vigorously; and then having this first Establishment in the Ground, they spread out in a surprising Manner, and the Trees shoot in Proportion.

Let the Gardener however be careful, that in procuring this Benefit for them, he do not run them into new Danger.

The fresh breaking of the Earth will make it more liable than before to the Penetration of Frosts; therefore if the Place be exposed, let there be some Haulm of Pease, or other such dry Substance, scattered moderately thick over the new dug Ground, and kept down by Pegs or Stones.

Dec.

Dec.

S E C T. III.

P O M O N A, or, the Fruit-Garden.

NO Fruits are ripening at this Season; nor have we left the Gardener undirected in any Article of preserving those of the Autumnal Kinds which may be sav'd for Winter Service. All that remains therefore, is the Management of the Ground; and of that little is to be said, for little can be done in such Weather as usually attends this Season.

Let the careful Gardener, who sees his present Leisure, and recollects the Hurry of his Business in the succeeding Spring, prepare himself for it, by placing every thing in Readiness.

Let him consider in what Part of the Garden or Orchard new Trees may be introduc'd to Advantage in Spring; and at once prepare the Ground and mark the Place by a good Digging.

Let him, in a mild Day, throw up the Earth, in these Spots, two Spade deep, and lay it in two Ridges, to mellow with the Frost; and let him note down in his Book what Tree he intends to plant in each of those Spots.

Let him then see that his new-planted Trees keep secure; that their Stakes do not rock, nor their Branches start from the Wall; and wherever he has laid any thing by way of Protection to the Roots, let him mind that it keep its Place.

Let him, in the worst Days, see that his Seeds and Roots are in perfect Order for sowing and planting in the Spring, and that all his Tools be in good Condition; and let him look into his Fruit-Room daily.

If any Pear or Apple begin to decay, let it be taken away: if he smell Mouldiness in any Parcel, let him search the Cause, and remove it; and, in the extreme severe Weather, throw Straw over those which lie upon the Ground, or upon Shelves.

Nothing discovers the Nature of a Soil more than Frost; and let the Gardener take this Opportunity of observing the true Condition of the Ground in his Borders where Fruit-Trees stand, and prepare for the Improvement.

He knows little of his Art, who can suppose one Manure will suit all Soils; but this is too common an Error, in Practice at least, if not in Judgment; and to this it is owing that a Fruit-Garden ill made at first, generally grows yearly worse.

Every Piece of Ground has its peculiar Qualities, and every Soil its appropriated Manure, or Matter of Improvement.

Let the Nature of the Ground now be carefully examined in this Part of the Garden, and Care taken to amend it, according to this reasonable Practice.

Clay is a common Soil in *England*, and there is not naturally a worse, tho' none is better when well prepar'd: if this be the Case in our Gardener's Fruit-Tree Borders, let him improve it thus:

Let him bring in a good Quantity of River-Sand; about one fourth Part as much Coal-ashes, and as much Pond-Mud: let these be broke and skreen'd together; not to make them very fine, but to mix their several Parts.

Then let a good Quantity of the clayey Soil be calcin'd or burn'd upon some Wood, till it will crumble to Powder; bring on this with the Ashes of the Wood, and mix it with the rest: spread this evenly over the Border; and, if the Trees be new-planted, dig it in with the Spade; if otherwise, with the three-prong'd Fork.

This, at one Dressing, converts the tough, barren, and cold Clay, into a mellow, rich, and warm loamy Earth; than which none is fitter for the generality of Fruit-Trees.

The hazely Mould, in which we find them thrive best of all, is not unlike this artificial Mixture. Nothing supports a Tree like Toughness in the Soil; but this prevents the Roots from spreading. The Ingredients here directed to be added, break and loosen its Parts to give them free Passage, without destroying its valuable natural Quality.

On the contrary, when the Earth is naturally loose and sandy, bring on Clay as an Improvement. This I have found succeed best when a little burnt; but not calcin'd to the Degree we have directed on the preceding Occasion.

One great Fault in these Soils is, that the Water runs off too quick; and nothing remedies that so effectually, as giving a Bottom of this half-burnt Clay. The Soil should be taken out two Spade deep for this Purpose, and the Clay laid in a Spade Depth, but not ram'd; over this must be thrown in the Soil again, improv'd by the Addition of the Clay, with some Pond-Mud and Pigeons Dung.

This will prepare a Border, in either of these Soils, fit for planting in *February*; or in an old one, the same Ingredients dug in as we have directed, will improve its very Nature.

These

Dec. These are the two Kinds of bad Soils most frequent with us; and the Method of improving them will lead to the Management of all the others. Dec.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

THE various Products intended to be rais'd upon a Piece of Ground, do not alter the Nature of its Improvement: Vegetation is the same, whether it concern a Cedar or a Cabbage; and the same Culture will, for all general Purposes, suit the same Soil.

With Regard to Particulars, the Direction for their Management are given under their several Heads; but, for the general Improvement of a Soil, whether it be for one Part of a Garden or another, the Rules are the same.

What we have just said of the Fruit-Tree Borders, may be transferr'd to the Kitchen-Garden; and in the same Manner, if the Soil be clayey, it may be improv'd by Sand; if sandy, by burnt Clay, with the propos'd Additions; and will, from that Management, alter its former Nature.

This is a Time to enquire into the Condition of the Kitchen-Ground, because it is now most vacant of its Products; and such Ingredients should be brought on to improve it.

The common Practice supplies the Use of all with Dung; but tho' nothing raises the Growths of a Kitchen-Garden so quick, nothing is more improper; for it renders them coarse and ill-flavour'd.

Indeed, for those who are most fond of its Use, what we have here directed should precede it; for if thrown in the common Way upon such Soils, it

can take little Effect. Its Virtue will be wash'd thro' the sandy Soil, and will not mix with the clayey in their natural State; but as we have directed them to be alter'd by Additions, they become a new Soil, and will receive and retain its Influence.

Let this, in every new Kitchen-Garden, be a great Article of the Proprietor's Concern: in the severest Weather these Ingredients may be pick'd up and brought in; and when it is milder, they may be dug into the Ground before the Spring-Planting.

The Beds of Artichokes will this Week require the Gardener's Care; they must be earth'd up, laying a Ridge of Mould over their Sides and Tops to preserve them from the Frosts. The Leaves must be cut down for this Purpose, and the Earth laid carefully over them.

Where there are any set for Fruit, let them stand, draw up the Earth close to them, and defend them well; this will keep them in Vigour, and the Artichokes will ripen at a very agreeable Season.

The Celeri is another Article that requires Care in this Part of the Garden; it must be earth'd up in a mild dry Day, very high, to preserve it from the Frost, as well as blanch it: and with this, and the sowing a little young Salletting to succeed the last, may conclude the Business of the present Week.

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R XVI.

For the second Week in *D E C E M B E R*.

S E C T I O N I.

F L O R A, or the P L E A S U R E - G A R D E N.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. P E R S I A N C Y C L A M E N.

Dec.
P. XVI.
Fig. 1.

THE Season makes this valuable : but at whatever Time such a Plant appear'd it would be worth the Culture it demands. The Leaves, as well as the Flowers, have their Beauty; and their Disposition, with the whole Form and Manner of Growth are pleasing.

Our Gardeners know it by the Name *Persian Cyclamen*; and they have, in this, judg'd better than many of the more celebrated Writers, who over-look'd it among the Number of Varieties rais'd from Seeds of the common *Cyclamen*, and thence omitted to give it a peculiar Denomination.

Its proper specific Name will be *Cyclamen foliis ovato-lobatis corolla retroflexa* : *Cyclamen*, with ovato-lobated Leaves, and a retroflex Flower.

It has been denominated *folio anguloso*, but the Divisions are all rounded; and I am a Stranger to that Geometry which calls such Figures angular.

The Root is tuberous.

The Leaves scatter themselves wildly from it, on long purple Foot-stalks, some erect, some drooping, others lying on the Ground.

Their Form is oval, with two, or sometimes more Indentings, which divide the broad Base from the smaller Extremity, and part the whole into three rounded Lobes,

Numb. XVI.

Nature wantons in this Particular extremely. Some Leaves have the Divisions slighter, some more deep; and some are shorter, some more extended in Length: all are indented deeply for the Reception of the Stalk, and their Colour is a fine strong green, a little ting'd with blueish. The Ribs are of a fainter Purple than the Foot-stalk; and the same Colour glows under the whole Leaf.

Among these appear the Stalks of the Flowers; these are of a paler red than those which bear the Leaves, and more than twice their Length: they rise naked from the Root, and each supports one Flower.

This is of great Beauty: it is large, and it hangs drooping.

The general Colour is white; sometimes, but not universally, ting'd with a fleshy Purple; and, at the Base, always ornamented with a kind of Circle or Ring, of a deep Purple, rich, and velvety.

This fallen, there ripens a large Fruit, a kind of Berry, round, and when mature, bursting into five Parts at the End, and shewing, in the Cavity, many Seeds of an oval Form, rais'd in some Places by Ridges; with an oval loose Receptacle.

To know the Class and Place to which this Plant belongs in the LINNÆAN System, let the

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Dec. Student tear open a Flower: he will see, by turning down the Segments, that it stands in a Cup, divided into five Parts; and that it is form'd of a single Petal: this he will perceive is tubular at the Base, and in that Part droops: for the rest, the Neck is prominent; and the Segments, which are naturally five, turn upwards.

The Structure of the Flower being thus understood, let him lay it open to the Base, to find the Organs of Impregnation. Within the tubular Part he will perceive five short Filaments and a single Style: this refers it to the fifth Class, the *Pentandria*, and places it there among the *Monogynia*, the first Section.

Culture of this CYCLAMEN.

The Plant is to be rais'd from Seeds; and the best Method is to sow them in Boxes, in the Manner of the choicer Flowers.

For this Purpose, let a Box of rough Boards be made, four Foot long, three Foot broad, and eight Inches deep.

Mix up some Pasture-Mould with one third Earth from under a Wood-Pile, and one sixth rotted Cow-dung. Lay these in a Heap, and let the Whole be well blended, and sometimes turn'd.

Let Seeds be sav'd from some very well growing Plant: lay them on a paper'd Shelf, and when thoroughly harden'd, tye them up in Papers, and keep them till *September*.

Then fill the Box within an Inch of the Rim with the Compost: scatter on the Seeds, and sift over them a Quarter of an Inch of the same Mould.

Set the Box in a Place where it will have

the full Sun all Winter; and pick off any Moss or young Weeds that appear.

In Spring the Surface will be cover'd with young Plants. Let the Box then be removed into a shady Place, where the Sun comes only two Hours in the Morning.

In *April* let the Plants be examined; and where they crowd one another let a few be pull'd up.

Give them, at Times, gentle Waterings; and in this Manner nurse them up, keeping them clear from Weeds, till they are fit for transplanting.

Against this Time let some fresh Compost be made of the same Ingredients as the first, and with it fill as many Pots as you intend to preserve Plants. Carefully take up the finest of them, one for each Pot, and plant them with all possible Nicety.

The Season for this is in Summer, when the Leaves are decay'd. When the best are thus potted, the Remainder may be planted in a warm, well-shelter'd Border, to take their Chance among the hardy Plants.

These which are potted must be plac'd in a shady Situation till they begin to shoot again: then they must be remov'd to a warmer Part; and at the Approach of Autumn taken into the Greenhouse; here they will flower about this Season, and with due Care will continue full of Beauty till late in Spring.

All this while they must, at Times, be water'd sparingly; and, unless Seeds are wanted, the Stalks should always be cut down when the Flowers are faded, to promote a Succession of new Bloom for the Continuance of Time we name.

2. The GUERNSEY LILLY.

P.XVI. We speak of known Flowers under their most common Names; but this is as improper as the worst: the Plant is no more a Lilly than it is native of the Island whence 'tis nam'd.

Fig. 2.

Few need be told that it is one of the finest Flowers the World produces, nor that it deserves the Care and Culture by which it may be brought to flower with us, like other Plants.

The Names by which it has been known, are *Lillium Sarniense*, and *Narcissus Japonicus rutilo flore*.

LINNÆUS, who first well-establish'd the Genera of bulbous Plants, makes it an *Amaryllis*; in this, together with those who know the Science, the most ignorant and obstinate now follow him. He adds to this Generical Name, as the Distinction of the Species, *spatha multiflora, corollis revolutis, genitalibus strictis*: Many-flower'd *Amaryllis*, with the Petals turn'd back, and the Filaments and Style rang'd close together.

Mr. MILLAR, envious of our Success, has un-

dertaken to give his Work, in the new Edition, the same Advantage we propose in this, by explaining to the *English* Reader the Sense of LINNÆUS's Names. In this Instance, he gives the same Words, and translates them thus: *Amaryllis spatha multiflora, corollis revolutis, genitalibus strictis*: *Lilly Daffodil*, with many Flowers in one Cover; the Petals equal, spread open, and turn'd backward, with BROKEN Stamina.

Where did he find these broken Stamina? not in the Plant, for they are there perfectly entire, strait, and very long: not in the Word *strictis*; for the just Sense of that is what we have express'd.

Not to rally this Author on a Deficiency for which we pity him, the Want of *Latin*, what are we to say of this Ignorance in Nature! Did Mr. MILLAR never see a *Guernsey Lilly*, or did he not write the *Gardeners Dictionary*? one of the two seems evident.

The Root is a large Bulb.

The Flowers appears at one Season, and the Leaves

Dec. Leaves at another. These latter are not without their Beauty, for their Form is regular and pleasing; oblong, with a moderate Breadth; and their Colour a most lively Green.

The Flower-stalk rises naked from the Root, and is a Foot and half high, of a pale Green, and decorated toward the Bottom with innumerable Spots of a bloody Purple: towards the Flowers 'tis palest, but often tinged with a light fleshy Hue. On the Top of this Stalk appears at first an oblong Scabbard, serving as a general Cup, and when it bursts, there spread out a considerable Number of Flowers of the most consummate Beauty.

They are large and beautifully formed; each is supported on its separate Foot-stalk, rising from the Head of the main Stem in the Bosom of the Scabbard.

The several Petals of which the Flowers consist, spread themselves wide as if to display their full Bloom to the Eye; and they are waved a little and turned back.

Their Colour is the most perfect Red, and they are spangled all over as it were with Gold: This with a deep Red Vein running along their middle, gives them a Glory and Splendor when viewed in the Sun, superior to that of all other Plants.

The Filaments are very long, firm, entire, and of a delicate Flesh-colour, and their Buttons are of a deep Purple; the Style which rises in the Centre, is much longer even than these: it is beautifully terminated by a Stigma divided into three Parts, and of a purplish Colour.

Nature, not to lavish all her Treasure upon one Flower, has denied this Fragrance. One Sense is fully satisfied with it, and even more, for in the Sun the Eyes ache to look upon it.

To know its Class in the LINNÆAN System, no more is needed than to count these Filaments, and the Style; they are six, and that is single; the Plant therefore belongs to the *Hexandria Monogynia*.

Culture of the GUERNSEY LILLY.

The Plant, though named from *Guernsey*, is a Native of *Japan*; there it flowers wild all Autumn in the Sands; and from thence it has by some Chance been thrown upon the Coast of that Island, and is an Ornament to all its Gardens.

The Roots are generally brought over thence in the beginning of Autumn; and when they have once flowered, are neglected, under a Notion that they will not easily be brought to it again; but with the Method we shall direct, they will flower with us the succeeding Years better than the first, and afford Off-sets that will also rise to flowering.

As there will be upon this Plan, but the Necessity of once sending for the Roots from *Guernsey*, let due Care be taken in that first Operation.

Dec. Let not our Gardener receive them as they come; but send over his Directions to some careful Person to mark the best Roots, and take them up as soon as the green Leaves which succeed the Flowers are decayed.

For their Reception let the following Compost be prepared.

Mix a Barrow of Mould from a rich dry Pasture, with half a Barrow of Wood-pile Earth, a Bushel of rotted Cow-dung, and half a Bushel of River-Sand; scatter over this a quarter of a Pound of Salt, and leave it to the Weather.

When the Roots come over, fill up half way with this Compost, as many Pots as there are of them; set one Root upon the Earth in each, very evenly on its Bottom; and fill up the Pot with more of the same Compost, till the Top of the Root is covered an Inch.

Give all the Pots a very gentle Watering, and let them be set in a shady Place.

Here they are to stand till the Shoot of the Flower-stalks appears; this will be toward the Beginning of *October*; and they are then to be set out in an opener and warmer Place, but defended against sharp Winds; and here they are to be at Times refreshed with Water that has stood some Hours in the Stove, if there be that Convenience.

The Flower-stalk will thus gradually rise to its natural Height, and the Flowers burst their Scabbard and gradually open.

They must then be placed where Rains cannot injure them; and where the Sun has not too much Power; and they will thus continue three, four, or five Weeks in full Glory.

This will be the first Reward for the Labour we propose in their Culture; but this will be far from the whole.

These Roots may be brought to flower annually, and all that Time will be raising a Supply for succeeding Seasons. To this Purpose let our Gardener manage them thus.

Dig up a Piece of Ground in the Seminary, big enough to hold all the Pots. Set them up to the Rim in the Earth, as soon as they have done flowering; and place over the whole Bed some tall Hoops.

Upon these in bad Weather draw a Cloth; but in milder Time let them stand open all Day. Thus they will be preserved through Winter; and in the Summer they are to be managed as we have already directed.

Toward *July* when the Root is preparing for its Shoot, let an Inch depth of the Earth in the Pot be taken off; and fresh Compost of the same Kind put in its Place; and every third Year let the Roots be taken out of the Pots, cleaned and placed in them again with fresh Compost.

This is to be done as soon as the Leaves are entirely decayed, and the Off-sets are to be then taken off, and raised in separate Pots. They will come to flower in about three Years.

Dec.

Dec.

3. FRINGED NARCISSUS.

P.XVI. This, tho' far from the most elegant of the
Fig. 3. *Narcissus* Kind, is valuable on Account of the
Season; and, with right Management, it will
annually rear its Head among the Snow in the se-
verest Winter, and add to the small Number of
Flowers at such Seasons.

Our People call it the Winter Daffodil, and
the common Writers, *Narcissus totus luteus medius*.
Its proper Name is *Narcissus spatula uniflora nectar-
rii limbo campanulato, profunde scisso*: Single-flow-
er'd *Narcissus*, with the Edge of the Nectarium
broad, and cut into Segments.

The Root is a small Bulb.

The Leaves are very long, of moderate Breadth,
and of a fine green.

The Stalk rises in the Midst of these, and is of
a pale green, a Foot in Height, and tolerably
firm. On its Top stands a single Flower, so
heavy that it droops. This rises from within a
plain oblong Scabbard, which, when it has per-
form'd the Office of shielding the Bud, droops
and withers.

The Flower is large, and not without its
Beauty.

Its Colour is a very fine yellow; and the Dis-
position of the Petals, and Edging of the Cup,
give it a considerable Degree of Elegance.

The whole Flower consists of a Nectarium and
six Petals. The Nectarium rises hollow from its
Base, and spreads to the Rim; and this, from its
Shape resembling a Cup, is call'd the Cup of the
Flower; a very improper Term, because it con-
founds this Part with the Perianthium or proper
Cup, in which Flowers are plac'd; and the Office of
which is supply'd by the Scabbard in this Instance.

The Petals are six in Number, and they are in-
serted into the Nectarium on the Outside, a little
above the Base.

The Nectarium in this Species is naturally di-
vided at its Edge into twelve Segments, which
are jagged at their Sides, and of a pointed

Form: these the Luxuriance of Culture will di-
vide more deeply, in a curl'd Manner, and edge
the Rim of this Part with a perfect Fringe.

The Seed-vessel is roundish, but ridg'd, and
the Seeds are numerous and roundish, with an
Appendage.

The Class of this Plant will be immediately de-
termin'd by opening a Flower; six Filaments
and a single Style will be found in it; and the
Student who has thus far pursu'd the Course of
the Science, will find no Difficulty to determine
that it belongs to the *Hexandria Monogynia*, the
sixth Class and first Section.

Culture of this NARCISSUS.

This is one of the hardy Daffodils that stand
our worst Seasons, and flower with little Care
from the Gardener.

It may be rais'd from Seeds, but that is a te-
dious Method; for, according to the common
Practice, it will be five Years before the Seedlings
flower; and, with the best Methods I have seen
try'd, they cannot be brought to it in less than
four.

The Method we shall recommend for this Kind
is therefore by Off-sets, which the Plant produces
in a great Abundance, and which should be
planted in a Bed of fresh Pasture Earth, with a
very little Cow-dung well mix'd among it; and
never taken out of the Ground, except to part the
Off-sets from them, once in three Years.

The Method of raising *Narcissus's* from Seed
we shall deliver under a succeeding Head, speak-
ing of some of the finer Kinds; and to that Place
also we reserve the Management of the Roots of
such Species. This which we intend shall flower at
the present Season, will succeed the better for be-
ing left absolutely to Nature; and it requires no
more Care than clearing the Bed from Weeds.

4. L I R I A.

P.XVI. This Plant, tho' superior to most we cultivate,
Fig. 4. is little known in our Gardens. 'Tis strange we
have not introduc'd it more frequent there, since
we familiarly raise many from the same Quarter of
the World: but this is not the only Neglect of
which we may complain; too many of the late
Writers on Botany have pass'd it over unnotic'd;
and those who have nam'd the Plant, have so
imperfectly explain'd its Structure, that there re-
quires a particular Consideration for the Generical
Character.

The Cup is a permanent Spatha, naturally
bursting into three narrow Parts.

The Corolla is form'd of six Petals, irregular
in Form, Shape, and Disposition. There are

three upper ones, and three lower:

The three upper are broad, oval, and pointed,
and these form a kind of Hood.

The three lower are long, narrow, and hang
down, making an under Lip. The six do not
unite at their Bases.

The Filaments are three; they are long, slender,
and terminated by oblong Antheræ.

The Pistil was wanting in the only Flower I
have had Opportunity to examine; nor have I
seen the Seed-vessel.

These Deficiencies in the Character must be sup-
ply'd by those who raise it, or who visit *Africa*.

The Structure of the Flower abundantly dis-
tinguishes it from all the hitherto establish'd Genera.

All



Persian Cyclamen

Fringed Narcissus

The Guernsey-Lilly

Luria

Stellate Nigella

Double Indian Nigella

Prickly Spotted-leaved Aloe

Dec. All who have mention'd it have spoke of its Beauty; but, from the Uncertainty of its Genus, they have call'd it by various Names.

ALBERTUS SEBA figures it under the Title of a *Sifyrinchium*. BREYNIUS calls it a *Gladiolus*; adding, as the Distinction of the Species, *flore singulari miniato inferioribus laciniis luteo viridibus*. Neither of these Names properly belong to the Plant; for the Characters of the Flower separate it altogether from those Genera.

The Root is a regular Bulb, of a brown Colour and firm Substance.

The Leaves rise in a Cluster, three or four together, closing about one another at the Base; and there usually are some small, imperfect or decay'd ones about their Bottoms; these are of a yellowish Hue, the others of a very elegant green, of the blueish Tinge; and stain'd lightly with purple at the Base.

They are broad, oblong, wav'd a little at the Edges, in the Manner of the Leaves of the white Lilly; and they terminate in a Point.

The Stalk rises in the Centre, and is a Foot or more in Height; naked, firm, purplish at the Bottom, and green on the upper Part.

The Top bends with the Weight of a large single Flower. It is at first contain'd in a Scabbard, of an oblong pointed Form, which bursting into three Parts, discloses the perfect Flower.

This is, in the highest Degree, singular, as well as beautiful. It is compos'd of six distinct Petals, three broad and three narrow.

The three broad which stand upwards, are of the most perfect Scarlet: the three lower are variegated with green and yellow, both very strong and lively Colours, and they have their Points tipp'd with Crimson.

In the Centre of the Flower rise three Filaments, which have their Place under the uppermost Petal, and are of a pale Flesh-Colour, with large Buttons of a deeper Scarlet than the Flower.

Down the Middle of each of the lower Petals there also runs a Vein of deeper Red; and along the Midst of each of the three upper, there runs a like Vein, with several smaller broken Lines, with the same Degree of Red. This gives the

whole Flower a Grace unknown almost to any other. Dec.

To find its Class in the LINNÆAN System, no more is needed than the easy Task of counting the conspicuous Filaments; their Number refers it to the Third of that Author, the *Triandria*.

The Plant appears, by one very singular Circumstance, to have been known long since, tho' afterwards lost to *Europe*.

We know how Heralds play with Nature in the Representations of Plants and Animals; but, beyond a Doubt, this is the proper *Flower-de-Luce* of the *French Arms*.

Culture of the LIRIA.

The Plant is a Native of *Africa*, where it grows on the Sides of Hills, in a loose but not barren Soil. Thence I receiv'd the Specimen of it, on which this Account is form'd; and thence the Roots may be obtain'd, as those of many other of the Plants which we have describ'd from that Quarter of the World, and have frequent in our Stoves.

The Time of taking up the Roots should be when the Leaves are faded; and they will thus keep very well out of the Ground during the Voyage.

At their coming into *Europe* they must be planted each in a separate Pot, with a Mixture of three Parts Pasture-Earth, and one Part Sand, and plac'd in the Shade.

Once in a Week they should have a little Water till they shoot; and as soon as they do that, they must be remov'd into an opener Place, where the Sun has more Power; and water'd every Evening, but a very little each Time.

Toward Autumn they should be remov'd into the Greenhouse, and thence into the Stove, where, with the common Care of foreign bulbous Plants, they will produce their most conspicuous and elegant Flowers.

The Plant thus once established, there will be no Fear of multiplying the Roots, for they will produce Off-sets; which being taken off once in three Years, will rise to Perfection by the same Methods.

4. STELLATE NYCTANTHES.

P.XVI. This is a Shrub of consummate Elegance, and, with its Beauty, has the Advantage of a powerful Fragrance. Its Resemblance in Flower to the Jasmine, has occasioned its being vulgarly call'd by the same Name; and by the earlier Writers also it stands rank'd under that Genus: to this Name our People annex that of its Country, and think they have sufficiently express'd it.

LINNÆUS, more correct and distinctive in his Characters, has clearly and happily pointed out its Difference from the Jasmine, and, arranging it under a separate Genus with the Name *Nyctantes*, adds, as its Distinction, *foliis inferioribus cordatis obtusis, superioribus ovatis acutis: Nyctantes*, N° 16.

with the lower Leaves heart-shap'd and obtuse, and with the upper oval and sharp-pointed.

In Place of the common but improper *English* Name, we have given it that of *Stellate Nyctantes*; the Form of its Flower naturally representing the Rays painted about a Star.

It is a weak Shrub of straggling and irregular Growth in its natural Condition; and never succeeds so well in Gardens, as when artfully united to a stronger Stock by Grafting.

The Root is woody, whitish, and spreading.

The Stem is covered with a brown Bark; and the long weak Branches are of a pale green.

The Leaves stand naturally in Pairs, and they

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are

Dec. are of an oblong Figure, considerably broad, of an elegant fine green, and ribb'd with a somewhat paler Colour. Those on the lower Part of the Branches are hollow'd in a heart-like Manner for the Footstalk: those on the upper Part are scarce at all indented in that Part; and they are more pointed.

The Flowers cover, in a Manner, the whole Plant, and are of an extremely pleasing Form, divided elegantly, of a Snow-white Colour, and, toward Evening, of a most pleasing Scent. Each is follow'd by a roundish Fruit of the Berry Kind, divided within into two Cells, in each of which is lodg'd a single Seed.

The Flower is, for its Beauty, worth a close Examination; and the Class of the Plant in the LINNÆAN System will so be easily discovered.

Its Cup is form'd of a single Piece, divided into eight narrow, pointed Segments.

The Body of the Flower has but one Petal, tho' divided so deeply, that there appear, on a slight View, to be many: this is tubular a little Way at the Base, and is thence divided into a Number of long Segments, which spread wide open. Eight is the natural and most frequent Number; but sometimes, from the Accidents of Growth, one is wanted, or one added.

Within the Centre of the Flower arise the Filaments, and they are only two: this shews the Class to be the second of LINNÆUS, that which comprises the *Diandria*.

The Style which rises between these is single, tho' divided into two Parts at the Top, and this shews the Plant is of the first Section of that Class, the *Monogynia*.

The Difference between this Plant and the Jasmynes is evident from the Structure of the Cup and Flower; the Jasmine having in each but five Segments.

Culture of the STELLATE NYCTANTHES.

We have observ'd this Plant never succeeds so well as when grafted on the common Jasmine; and the Gardeners of *Italy*, under whose Hands that Operation succeeds happily, furnish all *Europe* with it, ready for planting.

This is the common Method by which they come into our Gardens; and, if they have suffer'd no Damage in the Carriage, they rarely miscarry, unless by the Negligence or Ignorance of the Gardener.

We receive them in Spring; and the Person into whose Care they are given, is to treat them in this Manner.

Let a large Tub of Water be set all Day upon

Dec. a Dunghill, in the Sun; and in this wash thoroughly and carefully the whole Plant, Roots and Branches. See that no Moss be left about the Roots: if any of the Branches be decay'd, take them carefully off; and if any Shoots have risen from the Root, take them off also with the same Care: they would be of the Nature of the Stock, not of the grafted Plant.

When the Plants are thus far clean'd, set them in the Tub of Water, and place it somewhere under Shelter. Let it remain two Days soaking, then prune the Root; and have ready some Compost of fresh Mould and Wood-Pile Earth.

As soon as the Roots are trim'd, plant them in Pots of this Compost, one Plant in each, and set the Pots up to the Rim in a Bark-Bed that has but moderate Heat.

Shade them in the Middle of the Day, defend them carefully from the Cold, and water them gently once in three Days.

In about four and twenty Days they will begin to shoot, partly from the Stock, and partly from the Graft.

All the Buds upon the Stock must be rubb'd off as they rise, for the same Reason that the Shoots were cut from the Root: they are of the Nature of the Stock, not of the grafted Plant.

These being taken off, the Buds from the Graft will grow more freely.

The Plants must now be more frequently water'd; and the Air must be admitted to them in the warm Part of the Day, by raising the Glasses with a notch'd Stick.

Many Shoots will thus grow to some Length in a few Weeks; and they are then to be top'd, that they may have more Strength.

In the End of *May* raise the Pots out of the Bark; strew some fresh Earth upon the Surface, and by Degrees use them to the full Air.

In the Middle of *June* take them altogether out of the Bark-Bed, and set them among the Greenhouse-Plants: here they may stand till Autumn, and they must then be taken into the Greenhouse, and plac'd free from the Branches of other Plants, and where they may have Air. Here let them stand till the Beginning of *November*, and then remove them into the Stove.

This is to be their Management afterwards every Year, and they will thus flower profusely.

Their Flowers are of short Duration; but there is a continual Supply for many Months when they are manag'd less carefully than we direct; and this Way all Winter.

The Plant, tho' brought to us from *Italy*, is a Native of *Arabia Felix*, and there flowers all the Year.

Dec.

Dec.

5. DOUBLE INDIAN NYCTANTHES.

P.XVI. We here propose to the Attention of the Curious, the first of the whole Shrub Kind in Elegance, a Plant worthy all Care; and repaying all that can be taken of it, by more and richer Lustre.

It has been called Rose Jessamy, and great double *Arabian* Jasmine: it is properly a *Nyctanthes*, as the former. BREYNIUS calls it *Jasminum Indicum mali Aurunculi foliis flore albo pleno amplissimo*; and the same Name is copied by MICHAEL ANGELO TILLI, under whose Care it flowered in the Duke of *Tuscany's* Garden at *Pisa*; LINNÆUS, who has separated it by a generical Name from the Jasmine Kind, adds as its Distinction from the other Species, *Foliis ovatis acuminatis undulatis, ramis teretibus*. *Nyctanthes*, with oval, pointed and waved Leaves, and with round Branches.

The Root spreads, and is of a pale brown and woody; the Bark of the lower Part is greyish; the young Shoots are rounded, firm and green; and are sometimes stained with a fleshy Colour or faint Purple.

The Leaves are broad, oblong, and a beautiful Green; they are largest at the Base, waved at the Edges, and pointed at the End.

Their Colour is a very strong Green; and in favourable Seasons, their Ribs get the same Purple that stains the young Branches.

Their Manner of Growth is irregular, sometimes they stand in exact Pairs; on other Parts

of the same Plant, the two Leaves intended for a Pair, are inserted one a little above the other; and in other Places there grow three instead of two together.

BREYNIUS allows the Leaves only to stand in Pairs; but TILLI has Authority from Nature in representing them in some Places ternate.

The Flowers cover the Shrub in all Parts, rising from the Bosoms of the Leaves from Top to Bottom, and terminating all the Stalks and Branches.

Their Colour is a pure White; their Form and Bigness that of a small Rose; and their Scent that of the Jasmine Flower; but though fuller yet without all Faintness.

Toward Sun-set this is strongest, and to approach the Shrub at that Time, is to remember what Poets say of the *Arabian* Coast.

It is a Native of the *East-Indies*.

The celebrated Shrub of it in the *Pisa* Garden, was sent from *Goa*, where it is not less esteemed than the most curious of our Plants in *Europe*.

Its Class and Place in the LINNÆAN System, are the same with the preceding; but the Characters are not easily traced in double Flowers.

Its Culture and Management need not be made the Subject of a separate Article. It may be propagated by Layers; and the same Care we have directed for the other, will preserve it.

6. PRICKLY SPOTTED LEAVED ALOE.

P.XVI. The Aloes all have Beauty, and their Variety is also a great Recommendation.

The same Conveniences and Care needful for one Kind will raise many more, and their flowering at a Season, barren of most other Things, adds to their Estimation; we have for this Reason given the Culture of many of the Aloes; and shall of several more.

None claims that Regard we have shewn to the Genus more than this, whose Leaves as well as Flowers are full of Singularity and Beauty.

Many of the late Authors have described it, and most have taken the Name first given it, by the Author of the *Amsterdam* Garden, *Aloe Africana caulescens foliis spinosis maculis ab utraque parte albicantibus notatis*; LINNÆUS calls it, *Aloe floribus pedunculatis cernuis, corymbosis subcylindricis*; Aloe with drooping sub-cylindrick Flowers growing on Pedicles in Clusters on the Top of the Stalk.

The Root is formed of many thick reddish Fibres. The Leaves rise sometimes naked from the Ground, and sometimes are supported on a

Kind of Stalk, thick, short, and filmy.

They are fleshy, oblong, and broad: their Colour is a deep Green, spotted on both Sides irregularly with White; and they are edged with sharp and strong Thorns variously disposed, and terminate in a very robust, sharp Point.

The Stalk rises in the Centre of these Leaves, and is round, firm, upright: of a purplish Colour on the lower Part, and paler upwards.

The Films toward its Top are numerous though slight, and they of a mixed whitish green Colour, dashed with Purple.

The Flowers terminate the Stalk in a beautiful Manner. They rise nearly together, and they have separate, long, whitish Foot-stalks; these spread out from the Top so as to form a Kind of Umbell, and they are long, hollow, and of a fine Red.

The Class to which the Aloe belongs, is to be read in these, and we have had Occasion to explain it at large before; we shall therefore only observe here, that the Flower, as in other Species of the same Genus, is formed of a single Petal, that

Dec. that it adheres naked to its Foot-stalk without a Cup; and from a long and tubular Body of an irregular Form, opens into six Segments at the Rim, or frequently one more.

The six Filaments and single Style, which shew themselves at the Mouth of the Flower, and are continued within the tubular Part, shew it to be one of the sixth Class and first Section; the *Hexandria Monogynia*, in the LINNÆAN System, as are all the other Aloes.

Culture of this ALOE.

The Culture of the Aloe Kind, having been in general laid down before, as well as the Character of the Class, we shall not, except in Regard

of such Species, as from their Nature require particular Management, enlarge here by Repetition, but name the general Articles.

This is one of the *African* Aloes, which produce Suckers in Abundance, therefore it is easily propagated: its Soil is in its natural Climate, loose, dry, and sandy; therefore the general Composts we have directed for the Aloe Kinds, will perfectly answer its Purpose.

The Suckers are to be taken from the old Plants in the latter End of Summer, and they should be laid upon a Shelf two or three Days before they are set: they are then to be carefully planted in middling Pots of the Compost, and from that Time raised with the same Care we have directed for the other Kinds.



C H A P. II.

The Management of the Flower-Garden, Green-house, and Stove, for this Week.

THIS Week, if the Weather be not so frosty as to hinder it, let the Gardener turn all his Heaps of Compost; digging up every Parcel, carefully breaking all Clods, and turning it up to the Air with a new Surface: when he has done this, if the Weather be dry, let him give every Heap a sprinkling of Water, and thus leave them to the Weather.

This done without Doors, let him see to every Part within. Few Weeds will rise to trouble him in his Gravel Walks, but let the few that appear be taken up, and those Walks rolled firmly which are near the House, that no Opportunity may be lost of Walking when the Season permits.

The Beds of *Ranunculus's*, *Anemonies*, and other choice Flowers, will now require a careful Regard: we have directed the planting them in the most advantageous Manner; but that Care will be lost, unless all Danger be obviated at this Season.

If there fall Snow it will do them no Harm; it rather shields them from other Injuries, than causes any; and mellows the Ground which it covers: but Frost and Rain are equally destructive: we have directed in what Manner they are to be occasionally defended, and let it now be done upon either Occasion.

The Consequence of severe Frost, if they be left exposed to it, is evident; and that of Rains, if violent, is worse. They not only may by their own Coldness and Damp rot the Roots; but if they should escape this first Danger, the Wetness of the Ground will give the next Frosts double Power upon them.

Let the Practice we directed last Week for the Fruit-Garden, be continued this Week in the Flower-Ground.

Let the Gardener mark out all Places where he can plant flowering Shrubs in Spring, and dig them two Spades depth.

Let the Earth that is thus thrown up, be laid in a Ridge, as the Farmers throw up their Ground for fallowing; and once in three Weeks, let it be stirred and fresh turned during Winter.

The Severity of the Season will not allow the Green-house Plants to have much Air now; but for that Reason let there be no Opportunity lost of giving them that Advantage, when it can be done with Safety.

Every Evening their Shutters on the Outside of the Windows and Doors should be shut in the worst Weather; but when it is any Thing milder, they must be refreshed with Air whenever the Sun shines well upon the Place.

One Kind of Reasoning directs all this; and as we would have our Gardener understand every Thing he practises; we would imprint this strongly upon his Memory.

He may be assured from what we have said of Plants and Flowers, raised under Frames in Hot-beds, from what we have told him of the Management of his Kitchen Products, raised at these Seasons, in Frames and under Glasses, and from numerous other Instances occasionally interspersed in our Work, that a confined Air is destructive of all Plants.

That which the common Products of a Kitchen Garden cannot bear, he may be sure will prove fatal to the Exoticks in his Green-house; and he must set out with this general and unalterable Rule, that a Plant can no more be kept alive without fresh Air than an Animal.

In this Season therefore, he is to manage carefully in guarding these tender Kinds from Cold,

Dec. Cold, and at the same Time giving them so much Air as will prevent their Decay.

The Difference between Noon-Day and Night is very great in Point of Cold, even in the severest Seasons: the Air of the hardest Time is very different when warm'd by the free Sun, and when his Influence is obscur'd.

On this depends what we have directed for the Care of Green-house Plants in the Depth of Winter, and what we shall say farther on that Head: Let the Gardener keep in Mind these few Principles of his Conduct, and he will never err grossly.

If he should keep his Greenhouse shut up for a considerable Time together, in the same Manner as it is necessary to do in the severest Nights, he would see the Destruction of the whole Collection come on gradually; but even the first Notice he would receive this Way, would be so late, that a great deal of the Mischief would be past Remedy.

The Leaves, toward the Extremities of the Branches in several Kinds, would drop off; and by that Time he had Knowledge of this, by the falling of two or three, Numbers would have lost their Hold and Means of Nourishment; and, in Spite of all his Care would follow.

The Plants would be deform'd by this; and the next Stage of Mischief would be, that the Branches, from which these Leaves fell, would themselves decay; and afterwards the Whole.

In the mean Time the Contagion of these decay'd Leaves would extend itself thro' the whole Place, like the Mouldiness of a Pear or Apple in the Fruiter; and those Plants, whose Principle of Vegetation had been so strong that they resisted the first Mischief, would perish like the others from the latter.

This would be the State of a Greenhouse shut up too close and too long. At the same Time if the Intent of the Building were perverted, by leaving the Glasses too much open, a great Part of the Plants would perish by the absolute Cold: and these would be the most valuable; for the tenderer Kinds, rais'd with most Care and Trouble, would be nipp'd first.

These are the Dangers of the two Extremes: this is the Season in which they are most likely to happen; and we therefore take this Opportunity of laying it, in all its Force, before the practical Gardener.

Upon this Principle his Conduct must be thus regulated. Always at Night, in severe Frosts, the Shutters are to be clos'd; and for the greater Part of the Day; and sometimes all Day the Windows must be kept shut.

Whenever the Sun shines, and the Air is clear, let them be rais'd at Noon. This must be done according to the Degree of Cold: if very severe, a little opening of them only must be allow'd, and for a little Time; for the least will prevent

the absolute Stagnation of the Air within.

In better Days the Opening must be more free, and continued longer; and the Plants will, by that, be enabled to bear longer shutting up, if the succeeding Days demand it.

The Difference between a pure and foggy Air is very great. A thick Fog is almost as much to be fear'd in Winter as Frost. Such an Air let in for a few Minutes, and then shut up in the Greenhouse, I have known do more Mischief in one Night, than any other Accident, under tolerable Care, could have done in a Week.

All the Time the Greenhouse is oblig'd to be so much shut up, let the Plants contain'd in it have very little Water. They will require less than at other Times; and nothing will more contribute to the Damage they may receive from being kept close, than the Addition of that Damp which the Warmth of the Air will raise from the wetted Earth.

Decay of the Parts is what is dreaded, and nothing will promote that so much as Closeness, Heat, and Moisture.

The Care of the Greenhouse being thus once well understood, short Lessons will direct its Management on succeeding Occasions.

Every thing being well regulated there, let our Gardener look into his Stove: let him see by the Aspect of his Plants, as well as by his Thermometer, that the Air is properly heated.

If the Plants shoot too freely, let him a little slacken the Degree of Fire; and if they appear faint at the Ends of the Branches, let him a little encrease it.

Let him now well distinguish which of his Plants will require Watering, and in what Degree. Let him use no Water for this Purpose but what has stood a Day and Night in the Stove, and give this very sparingly to those which most require it, such as the Shrubs and Plants of a firmer Structure, and scarce any to the *Cereus* Kinds.

These have no Leaves to lose, therefore there is less Danger of their wanting Moisture; but with Regard to the others, as the Heat of the Air keeps them perspiring, they must be supply'd proportionably at the Root, or they will be stripp'd one by one of their Leaves, as the Plants in the Greenhouse will from Over-closeness.

We have given particular Directions under the distinct Heads, for the Management of those Plants of which we have treated with Respect to Watering; but, in general, the woody Kinds will require it most frequently, the herbaceous in a middling Degree, and the succulent least.

Those which require most should have it allow'd them, not by an Increase of the Quantity, but by repeating it the oftener; for it will always be for the Advantage of the Plants in general, in the Stove, not to water too many at a Time, nor those too largely.

Dec.



S E C T. II.

The Management of the SEMINARY, for this Week.

Planting, Sowing, and Removing, at this Time cease; it is but little therefore the Seminary requires; but whatever it does require or can admit, should be very carefully executed, to save the Hurry of the approaching Spring.

We have directed, in a preceding Week, the Earth to be dug and thrown up in Ridges, that is intended for planting in *February*: let this be broke and turn'd in a mild Day; and thrown up in a new Ridge, that the Influence of Frost and Winds may be receiv'd on a fresh Surface.

There is no Season when a Gap or Breach in the Fences of a Seminary, can be so mischievous as at present; it wou'd admit the cutting Winds, that will nip the tenderer of the Plants; and Vermin may get in, which will destroy without Measure. Some Kinds will bark the Trees, and others tear the Seeds out of the Ground.

For these Reasons let all be kept secure; and let the young Trees be well supported by their Stakes in the Stem, and preserved by covering the Earth about their Roots.

Cold Rains will fall at this Season, and they

may be as prejudicial in this Part of the Gardener's Ground as any other.

Let him observe whether there be any Spot where they lodge; and, if there be, cut Drains from it, to carry the Water clean off. This is not only necessary at this, but all other Seasons of the Year.

In Winter a wet Ground gives the Frost too much Power upon the Roots; and in Spring it makes the Shrubs shoot out too fast.

The Business in a Seminary, is, that the Plants should grow firm and sound, which will never be so well ensur'd as when the Ground is perfectly drain'd.

The last Care in this Part of the Garden, for the present Week, should be the looking over the Beds of Seedlings, whether of the Flower or Tree Kind.

These must a little be shelter'd by loose Straw, a Mat, or other Covering, according to their Nature, as directed under the proper Heads, if the Frost be severe; and, if more remiss, those Coverings must be accordingly rais'd up, or taken off.



S E C T. III.

P O M O N A, or the FRUIT-GARDEN.

IF the Frost be severe this Week, nothing is to be done among the Fruit-Trees; but if the Weather be more open, and the Spade can be employ'd, there is no Time when it will be found more serviceable.

The Season is about to approach for the Roots drawing Nourishment, and those of Trees do it sooner than most imagine. Therefore let the Earth now be prepar'd, to give Way to their young Fibres, and to supply them with proper Juices.

To this Purpose, let the careful Gardener dig up all the Ground between the Trees in his Orchard, a full Spade deep, picking out the Roots of Weeds as he finds them, breaking the Clods, and afterwards sifting on a little Soot, and scattering over that some Pigeons Dung. This will break the Stiffness of the Soil, and by that

Means give free Passage to the young Shoots from the Roots of the Trees: these Shoots will be much more numerous, by Means of cutting off the Ends of old ones, and the Manure will be dissolved by the Rains of Winter, and thoroughly wash into the Earth before Spring.

This Cultivation of the Ground about the Trees in an Orchard, is more neglected than any Part of the Gardener's Business, yet is there not any Thing more necessary.

The Condition of all Earth is this: when it lies at Rest it grows hard and solid: from this State it is broken and improv'd by Digging, for the Plantation of the Trees; and when they are planted, if it be neglected, it will grow from that Time more and more firm; declining into its old natural State again.

The Industry of Man in Tillage gives the
Earth

Dec. Earth in Fields its great Fertility, and why should it be deny'd to an Orchard.

Trees will indeed make their Way, and support themselves better than most tender Plants, without Man's Assistance; but they will do much better with it; and as so small a Share will answer the Purpose, it is very wrong to withhold that.

By this Method of digging up the Ground, and a free Use of the Bill and Saw, in clearing away some of the Branches, an Orchard may be made to produce four times its usual Quantity.

Dec. To compleat this Work, let the Trees be thinn'd of some of their abundant Boughs, and the Heads reduc'd to such Extent, that the Sun and Air can come freely at every Part: the Consequence will certainly be, that the smaller Quantity of Wood left, will yield a much larger Produce than the Whole in its wild State would have done; and the Fruit will be much finer. The Philosophers Paradox, That Half is more than the Whole, will be very perfectly illustrated in this Example.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

WE have, in the preceding Week, directed the Gardener what he is to do if the Weather at this Time prove very frosty; and shall now consider it in the other Extreme of Wet.

In this Case, the Advice we have given him in the Nursery, must be continued here. If Water lodges in any Part, it will be a certain Occasion of Mischief; therefore let it be taken off by a well cut Drain.

This is a Part of the Business very necessary to be done at some Time, and at none more proper than this, when the Season does not require nor admit any other Hurry.

Let him next look to the Artichoke-Beds, which we directed him lately to cover with Mould: if the Frost threaten, let a little dry Pease-Haulm be scattered over them; and, if Wet lodges, let it be in the same Manner carry'd away.

There is no Part of the Ground in which a Lodgment of Water will not be hurtful; no Time of the Year at which it will be more destructive than now: none when it so readily discloses itself; and none in which the Gardener is more at Leisure to remedy the Mischief.

Let him therefore this, or any of the succeeding Weeks, when there happens much Rain, look to the whole Ground under his Care, observe when the Damage is like to happen, and at once prevent it, for this and all succeeding Occasions.

In a mild Day let him fix upon some Spot for a good Crop of Pease and Beans.

Let him dig up the Ground, carefully break all the Clods, and then draw Lines for planting them.

The best Bean for this Time, is the *Sandwich*;

and for this Kind the Rows should be a Yard asunder, and the Plants eight Inches distant in the Rows. The common Practice places them much closer; but they err, who suppose more Beans are produced by unreasonably multiplying the Plants in the same Piece of Ground.

No Reasoning is like Experience: and I have found, by fair Tryal, that in this Way the Ground will yield one third more Beans than when twice as many Plants are rais'd in it; and that the Beans are always sweeter.

The Pease should be sown in Drills, at considerable Distance, and fewer allow'd to the Ground, in the like Manner; for the same Reasoning holds good, and is supported by the same Experience, that ten Plants, well nourish'd, will produce from the same Ground more Fruit, than twenty which are planted so near as to starve one another.

The Hotspur is a very proper Kind for this Plantation, and they should be scattered thin in Drills, about an Inch and half deep. The Ground should be well broke over them, and they will shoot at their own Time, sooner or later, according to the Season; and will ripen so early as to succeed the Dwarf Pease rais'd in Hot-Beds, as we shall direct in its proper Place.

The Pease for that Use the Gardener has now growing, if he have observ'd carefully our Directions for sowing them in the End of Autumn; and three Weeks hence we shall direct him to take them up, and forward them by this artificial Method.

Here it may be proper to observe, that he is by no Means to omit the sowing Pease now for a natural forward Crop, because he intends to raise some for that Purpose in Hot-Beds, for that is a tedious Business; and the first Pease that come in a natural

Dec. natural Way are vastly preferable, because they have their true Sweetness.

The Mushroom-Beds now require a great deal of Care, but they will very well repay it by the Supply they yield.

The Gardener has seen from the Construction of these Beds, that two Things principally promote the Growth of the Spawn, these are Heat and Moisture: but if either of these be in too great a Degree, they will fail; and if very good Care be not taken at this Season, so much Wet will get into the Beds as to drown the Spawn; and altogether rot it with that Heat which would make it shoot. If they be made as we have directed; they will require no more Assistance to keep in their Heat, and defend them both from Frost and Rain, than a good Covering of long Straw.

Only let the Gardener be careful that he does not hurt what he would preserve, by doing this heedlessly. The Straw must be dry when it is laid on; and it must lie no longer than while it continues so; when it grows damp and falls, it must be removed, and the Place supplied by more.

The Cauliflower Plants which we have directed to be tended hitherto with so much Care, are at no Season in more Danger than now.

They are under the Shelter of Glasses, and are in all Respects in the Condition of Green-house Plants: therefore what we have just directed for the Preservation of those will keep these also in Health; and no other Way can.

The Glasses must always be let down in an Evening to cover the Plants close from the Night Frosts, but towards Noon in a serene Day they should always be opened.

If any dead Leaf appear upon them it must be taken off; the Mould must be drawn about their Stems; and it will be of Service also frequently to stir the Surface to a little Depth with-

in the Glafs, and to dig it up round about it.

Dec.

This last which is not commonly practised is a great Assistance, for it promotes the spreading of the Roots, by taking off their extreme Ends, and gives them a light loose Earth for growing.

Let this, which is the same Thing we have directed in the Orchard, be continued also to every Part of the Kitchen-Ground, where there is any Crop growing.

Beans and Pease which we have directed to be sown and planted in the preceding Months, will now be up at some Height, and nothing tends so much to preserve them, as this Practice of digging near their Roots.

It not only gives them a Supply of Nourishment, when that is scarce; but affords the Gardener at the same Time the easiest Opportunity of Earthing up their Stalks, which is as essential to those Crops meant to stand out the Winter, as any part of the Business.

The Bottoms of the Stalks of Beans are apt to stoop, and lie a little Way upon the Ground, and the cold Wet of the Surface at this Time rots them: this is prevented perfectly, by the Practice of Earthing them up.

The Mould is thus brought over them on these weak and half decayed Parts, and being drawn up some Inches of the Stem above, the whole under Part of the Plant which was most endangered, is by this Means perfectly sheltered; and the Stalk rises single, bold, and upright from the Top of the Earthing, as if it had originally grown from the Seed in the same firm Manner.

The Stalks of Pease lie much more upon the Ground than those of Beans, and they suffer in the same Manner from it, if unguarded at this severe Season; the same Method is to be used of Earthing them up, as directed for the Beans; and it gives them in like Manner a Kind of new Growth.

EDEN:

E D E N:

A

COMPLEAT BODY of GARDENING.

N U M B E R XVII.

For the third Week in *D E C E M B E R*.

S E C T I O N I.

F L O R A, or the P L E A S U R E - G A R D E N.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. P R O L I F E R O U S M O U N T A I N C R O W F O O T.

Dec.

Plate
XVII.
Fig. 1.

THE extreme Singularity of this Plant must recommend it to the Curious; and it has Prettiness enough to recompense the little Care it demands.

If it wants the full Splendor of the Stove Plants, neither does it require their expensive Culture.

Most of the Writers in Botany have named it, and all under its proper Title *Ranunculus*, tho' with various Additions. *BAUHINE* calls it *Ranunculus latifolius bullatus asphodeli radice*. *LINNÆUS* gives in a short Name, an absolute Description, *Foliis ovatis serratis scapo nudo unifloro*, Crowfoot with oval ferrated Leaves, and single Flowers on naked Stalks.

Such is exactly the Condition of the Plant in a State of Nature, for it is the Gardener's Art that fills the Body of the Flower with clustered Petals, and raises the young Off-spring from its Bosom.

The Root is formed of several oblong tuberos Pieces.

The Leaves are not without their Beauty, they spread in a pretty Cluster on the Ground, and have short Foot-stalks.

These are White with a light Tinge of Green: the Leaves themselves are of a pale, but very agreeable Green; and they have a few straggling whitish Veins. These are very conspicuous on Numb. XVII.

the under Side, and the Leaves often rise into a Kind of soft Lumps or Tubercles between them.

The Shape of the Leaf is oval: it is a little hollowed in the broad Part for the Stalk, and grows narrower to a Point: the Edges are beautifully ferrated.

Among these rise the Stalks. They are numerous, slender, of a whitish Green, but tinged a little with Red toward the Base, and about four Inches high.

No Leaves grow on these: each is destined for the Support of one Flower, and this is in the State of Nature, large Yellow, formed of five Petals, with a great Cluster of Filaments in the Centre, and of a light Fragrance.

In this State some have looked upon the Plant, as a distinct Species, and entitled it by another Name. *DODONÆUS*, has called it *Ranunculus Lusitanicus*, and our People thence the *Portugal Crowfoot*.

To this State of the Plant, we shall again refer the Student, when the Class is to be determined; but we are now to explain the Differences made in the Aspect of the Flower by Culture.

In Nature the Petals, when the Root is well nourished, will exceed the proper Number, as in

Dec.

Dec. our Meadow Crowfoots, being sometimes seven or more; but luxuriant Art makes them innumerable, and adds the pleasing Wonder of a second Production.

On the Top of each Stalk, as it first rises from the Root, appears a green, oval Button, tipped with Gold: this as the small Stalk rises in Height, swells and expands, till by Degrees it grows in the full Lustre of a double Flower composed of Multitudes of narrow and sharp-pointed Petals in various circular Series; and all of a delicate Yellow.

In the midst are buried some fine Threads with thin Buttons, which impregnate the Rudiments of many Seeds, appearing afterwards in an oblong Cluster.

In this State the Flower has great Beauty and Singularity of Aspect: the pointed Form of the Petals, gives it this Peculiarity, and if brought without the Leaves to a common Observer, he would call it a Yellow Hepatica.

This however is not all the Lustre to which it may be brought. Where the Soil suits, and no Negligence or Ignorance of the Gardener prevents, there will in the most vigorous Plants appear on some Stalks, the proliferous Flower, we have represented in the Figure.

In these, the first Structure is the same as in the others, but from the Centre there rises a small Stalk, supporting on its Top a Representation of the first in Miniature.

The little Flower is formed exactly as the larger, but the Colour is fainter; the Bottom where it joins the Stalk, is White; the first Series of Petals, are also White tipped with Green, and tinged with a little Yellow; and the rest are of a fainter Yellow than those in the original or lower Flower.

Such is the elegant Aspect of this Species in its best State: but even here what Nature gives in one Instance, she restrains in another; the Flower thus rendered double and proliferous, loses its natural and original Fragrance.

To know the Class to which this Plant belongs in the LINNÆAN System, the Student must examine a single Flower. He will find this placed in a Cup formed of five oval Leaves, lightly tinged with the Colour of the Flower, and they fall also with it.

The Body of the Flower he will see composed according to the Condition of the Plant, and various Degree of Nourishment, of an uncertain Number of Petals, but not less than five, and in its Centre he will find a great Number of Filaments, crowned with oblong, obtuse, and doubled Buttons; in the Centre of these he will see a Cluster of Rudiments of Seeds; whose Styles are so short, that they are not distinguishable, but with small reflex Stigmata, or Tops.

One Observation more leads him to the Class of the Plant; but without that he may under this Degree of Knowledge err: let him examine whether these numerous Filaments rise from the Receptacle, or from the Inside of the Cup.

We have before explained to him, that this Circumstance makes the Distinction between the twelfth and thirteenth Class in the LINNÆAN

System; the *Icosandrous* and the *Polyandrous*.

Dec.

In this Plant they rise from the Receptacle, therefore it is one of the *Polyandria*; and the numerous Rudiments of Fruit, declare it also one of the *Polygania*.

We have before told the Student, that where the Styles are too short for Inspection, the Number of these Rudiments and Stigmata (Parts properly affixed to the Heads of Styles) shews the different Order.

The Genus of *Ranunculus* under this Class, is distinguished by a peculiar Mark, the Nectarium; this is a little Hollow containing in its Bottom a minute Gland, and situated near the Base of each Petal.

In the most double Flowers, this is least conspicuous, but the Student is not to suppose the Plant of any other Genus, should this be wanting in such Flowers entirely; for we have told him, where these are so luxuriant, the distinctive Parts are most difficultly seen; and often lost entirely.

Culture of this CROWFOOT.

It may be raised from parted Roots; but it is best produced from Seeds. These rarely ripen in the proliferous Flowers; but as there are usually some which are not proliferous from the same Root with those that are; let the Gardener save his Seeds from these.

Let him cut off the proliferous Flowers from such a Plant, as soon as they shew their Nature; and then digging about the Root, and gently Watering it, raise the other Flowers upon their Stalks, to the most full Perfection for ripening the Seeds.

These let him collect by cutting off the Heads as soon as they change Colour: let him lay them on a paper'd Shelf, and the Seeds will fall off after they are hardened. Then let him spread them to harden more perfectly; and after ten Days tie them up in Papers for the proper Season.

The last Week in *August*, dig up a Border in a warm Part of the Garden, cover it five Inches with fresh Mould, from a dry rich Pasture, and scatter on these Seeds.

Sift over them a quarter of an Inch of any of the light Composts we have directed for other Plants, and lay some Pieces of Furze Bush upon the Ground.

Here let the Plants take their Course; and they will do better than with all the idle Arts of Culture.

When they have some little Strength the succeeding Spring, thin them by taking up the weakest, and plant these in other Parts of the Garden; leaving the others at eight Inches Distance in their original Bed: from this they are never to be removed until the Roots want parting, and here they will flower more gloriously than with any Art.

This is the Method I have practised: this the Instruction I wish every where to lay before the Reader: Rules established on my own Experience, not taken from the common Books, Retailers of one anothers Folly.

Dec.

Dec.

2. SPIRAL VALLISNERIA.

Plate
XVII.
Fig. 2.

Here we propose to the Attention of the Curious indeed a Wonder; a Plant worth all the Pains that can be taken to raise it in our Country; and of all that can employ the Mind upon the Miracles of Vegetable Nature, the first, greatest, and most worthy.

We know that in the Generality of Plants, the Seeds are impregnated from Organs situated in the same Flower; and that in some these necessary Parts are plac'd on other Shoots of the same Species.

The common Spinage ripens no Seeds if the Male Plant be pull'd up; and the Female Palm pines in Barrenness, till her Male Consort rises above the surrounding Trees, and gives to the loose Winds that Dust they waft to her.

In all this, strange as it appears, the two Plants hold their Places, and each Kind of Flower remains on its own Stalk; but, in the present Instance, there is almost the Animal Power of Locomotion.

The Male and Female Plants grow separate at the Bottom of the Waters; but 'tis not under them that the Impregnation can be made.

The Female raises her Flower upon a spiral Stalk; which, accommodating itself to the Depth of Water, and even to the Rise and Fall of Tides, keeps it always just upon the Surface.

The Male Flower mean Time opening far below, when it is ripe for its destin'd Office, breaks from its Stalk entire, rises to the Surface, and floats upon the Water, till the Current or the Motion of the Air brings it to the Female, its destin'd Spouse.

The earlier Writers were not acquainted with the Plant; but since BOCCONE and MICHELI all have nam'd it with due Admiration.

The first has join'd it with a very unlike Genus, the Pond-weeds, and calls it *Potamogeton Algæ folio Pisanum* *.

MICHELI nam'd it *Vallisneria*, after a very eminent Botanist, VALLISNIERI: a Custom well establish'd, but of late so much abus'd by the Use of unworthy Names, that it is best rejected.

That Author calls it the female Plant *Vallisneria palustris algæ folio Italica foliis in summitate denticulatis flore purpurascens* †: and, not perceiving the Male Plant rose from the same Seeds, and only differ'd in Sex, he nam'd that distinctly *Vallisnerioides*; adding, *palustre algæ folio Italicum foliis in summitate tenuissime denticulatis floribus albis vix conspicuis* ‡.

LINNÆUS, and the other late Enquirers, found the two Plants, differ'd in Sex, not Species; and as there has been no other discover'd of the Kind, they retain || the Name *Vallisneria* without Addition.

The Root creeps under the Surface of the Mud,

and is white, slender, and hung with many Fibres.

The Leaves are very long, narrow, wav'd at the Edges, obtuse at the End, and all along the upper Part edg'd with the finest Serrative that can be conceiv'd.

These rise in a Cluster from the Root, and at their Base have a Tinge of Crimson: the rest is of a very beautiful green; and there run a few Ribs lengthwise, which are reddish toward the Bottom of the Leaf, and upwards whitish; with Fibres of a pale green between them.

With Respect to the Flowers and their Stalks, we are to consider the several Plants distinctly.

In some, which are the Male Plants, there rises among the Leaves a very short, slender, and plain Stalk, supporting a Spike of little Flowers.

These are white: they are defended by a common Scabbard, which splits into two oblong narrow Parts; and each of these is again divided at the End, and turn'd back.

The Ear, which this defends in its Infancy, is covered all over with these minute white Flowers. Each is form'd of a single Petal, divided to the Bottom into three Segments: and these are broadest at the Extremity, obtuse, and turn'd back.

These contain the Male Parts for Impregnation; and, as they ripen the small Buttons on their Filaments, they start from the common Ear, and rise to the Surface of the Water, where they float in such Number, that in some Places the Whole appears covered with them as a loose white Dust: then the Buttons, which had receiv'd Maturity under the Water, dry, and become fit for their Office.

This is the Male Plant call'd *Vallisnerioides*.

The Female sends up among the Leaves many Stalks, which are slender, purple at the Bottom, and upwards of a whitish green; and, for two thirds of their Length, are twist'd spirally. Their Substance is tender, with a considerable Degree of Elasticity; and may be drawn by pulling out to a greater or lesser Length.

The Purpose of Nature is, that these female Flowers should float exactly upon the Surface, that they may meet the loose and scattered Male ones: the Stalk therefore unwinds its Folds, so far as to reach that Surface, and maintains the Place for the Flower, by lengthning or contracting the Spiral Part upon all Occasions.

There are no Leaves on these Stalks: one Flower is supported on the Summit, and this is very singular. The Scabbard, serving it in the Office of an outer Cup, is long, and of a cylindric Figure, but split into the End into two Parts.

* BOCCONE Musæum, I. p. 29.

† MICHELI Genera Plantarum, 12. t. 10. f. 1.

‡ MICHELI Gen. Pl. t. 10. f. 2.

|| DALIBORD, LINNÆUS, VAN ROYEN.

Dec. These do not turn back as in the Male's Scabbard. Within this rises the proper Cup of the Flower, and this is plac'd on the Rudiment of the Fruit, and at the Top is divided into three oval Segments.

The Flower itself is form'd of one Petal, divided into three Parts, which are of an oval Form, convex, and plac'd upon the Cup. The Cup is green, and the Flower of a faint Crimson. Within the Flower are three Points, one plac'd on each Petal, and these are the Nectaria. Their Colour is a fainter red.

The Male Flowers having all risen to the Surface, the Ear they cover'd withers; but, after each Female Flower, comes a Seed-vessel; this is oblong, cylindric, and contains numerous oval Seeds.

Thus the more Curious have describ'd its Flowers, and general Manner of Fructification; and thus LINNÆUS, with the rest, have taken the Account. It is confirm'd to me, with the Addition of the Particulars here nam'd, by late Letters of Signor BRUNI, so that I can in no Respect doubt the full and exact Circumstances, tho' no more than the Author just nam'd I have been able to obtain a Sight of its most singular Flowers §.

The Place this Plant claims in the LINNÆAN System, is declar'd already in its peculiar Character, of having Male and Female Flowers on separate Plants; all which are of that Kind, being rang'd by that Author in his Twenty-second Class, the *Dioecia*: but to find under what Section in that Class it is to be plac'd, the Male Flower must be examined for the Parts of Impregnation.

In this there stand two upright Filaments, of the Length of the Flower, crown'd with oblong Buttons. This Number of Filaments, which is in the other Classes a primary and constitutional Character, in this becomes only the Mark of a subordinate Arrangement.

There is no Plant of the *Dioecious* Tribe, whose Male Flower has a single Stamen: this Number is the smallest known; and the Plant therefore belongs to the first Section.

Dec.

Culture of the VALLISNERIA.

The Plant is a Native of *Florence*, and some other of the warm Parts of *Europe*, where it flowers annually in their Ditches; the Whole, except the female Flowers, remaining under Water.

LINNÆUS thinks he has seen it in colder Climates, but without its Flowers.

It is evident from this by what Means it must be rais'd here.

The Roots of Water-Plants are very full of Life; and these taken up with a good Lump of the Soil from the Bottom, may be very well brought to *England* in a Condition of Vegetation.

They should be Roots of young Plants which have never flower'd; for the Principle of Vegetation is in these much stronger than in such as have answer'd the Purpose of Nature by ripening their Seeds.

For the Reception of these there should be selected some warm Corner of a Canal or Pond, where the Depth is not too great, and the Bottom a rich Mud.

In this the Roots should be planted with Care, closing the Soil about them, and Art can do no more. They will live in less favourable Situations; but where they stand shelter'd from cold Winds, open to the South Sun, and at a Depth where its Rays may reach the Bottom, they will have a fair Chance to flower.

After they have shot, it will be proper to keep them entirely clear from Weeds; and with no farther Care they will naturally succeed.

The Shallowness of the Water will be a very essential Article in their Favour; for as the Difference between us and *Italy*, to a Plant which grows naturally under Water, is principally in the Heat that Water has during the Summer Months, this may be assisted by the Shallowness; the Water of little Depth being always in the same Pond considerable warmer than what has more.

3. PECTINATE - LEAV'D OTHONNA.

Plate
XVII.
Fig. 3.

This is a Plant whose whole Aspect will assist in recommending it to the Curious. The Flowers, which are numerous, do not want their Beauty; but there is also a great deal in the Growth and Figure of the Plant, when properly manag'd, and not a little in the Leaves.

Many of the later Writers have describ'd it; but, till the Time of LINNÆUS, its proper Genus has not been well establish'd. To this it is owing that we read of it under various Names. The syngenesious Plants, like the bulbous, had been very ill distinguish'd, in Respect of their

Generical Characters, till this Author took them under a more strict Consideration.

PLUKENET has figur'd it under the Name of *Jacobaea Absinthites* — and COMMELINE retaining the same Generical Term *Jacobaea*, adds, *Africana frutescens foliis absinthii umbelliferi incanis*.

LINNÆUS distinguishing many of these Plants under the Name of *Othonna*, adds, as the specific Character of this, *foliis pinnatifidis, laciniis linearibus parallelis*: *Othonna* with pinnatifid Leaves, and narrow parallel Segments.

§ Nunquam nobis licuit desideratissimos intueri flores. LINNÆUS, Sp. Pl.

Dec. The Root is woody, brown, divided, spreading, and hung with many Fibres.

The Stem is also woody, and is covered with a rough brown Bark, and with the Remains of many fallen Leaves, whose Footstalks are more durable.

The Branches are numerous, and their Bark is greyish.

The Leaves are scattered over them without Order, and they are of a pleasing Figure; they are oblong, considerably broad, and divided on both Sides almost to the Rib, into a great Number of long, narrow, and parallel Segments, like the Teeth of a Comb, running a little obliquely.

The Colour of these is a whitish green, and they are hoary.

The Footstalks are sometimes reddish; and the Rib in the Middle is frequently a little ting'd in the same Manner.

The Flowers are large and yellow; they are plac'd on long, slender, whitish and hoary Footstalks, terminating the Tops of the Branches, and are not without their Beauty: they are of the radiated Kind, and have the Rays particularly long: these are of a very fine strong yellow; and the Disk in the Centre, which is small, is of a very deep Tinct of the same Kind.

The Seeds are numerous, and wing'd with Down.

The Flower is of an unpleasing Smell; but the Leaves when rubb'd in the Hand are not disagreeable; and in Taste they strongly resemble a Carrot.

The Cup in which the Flower stands, is form'd of a single Piece, and is of a plain Structure, hollow, and at the Rim divided into eight Segments.

The Floscules contain'd in the Body of the Flower are of two Kinds, tubular and ligulated: these Terms we have explain'd, treating of other of the composite flower'd Plants.

The tubular Floscules occupy the Centre, and are numerous: the ligulated Floscules are few, and stand at the Verge.

The tubular contain five Filaments, whose Buttons are of an oblong Form, and unite in a Cylinder; and in the Midst of these is plac'd a single Style.

In the ligulated, which are female Floscules only, there are no Filaments; these contain the Rudiment of a Seed, from which rises a single Style, split at the Top.

This Structure of the Flower shews its Class in the LINNÆAN System; the Coalescence of the

Buttons in the tubular Flowers, speaks it one of the *syngenesious* Tribe; and the Seeds so rarely ripen in the Center under the tubular Floscules, and so regularly under the ligulated ones, at the Verge, that it is seen to be one of the *Polygamia necessaria*, those in which the various Method of Impregnation is not superfluous.

Culture of the PECTINATE OTHONNA.

The Plant is a Native of the *Cape of Good Hope*, where it naturally thrives in a mixt Soil of Mould and Sand, in Places that have Moisture. This indicates the proper Manner of its Culture with us. There must be prepar'd for it a mellow Compost, and it must have the Shelter of the Greenhouse to keep it alive thro' Winter; and, to give it the full Lustre in flowering, the Stove.

Let the Compost be made thus:

Take up a Barrow of rich black Mould from under the Turf in a Meadow; put to this a Bushel of coarse Sand, a Bushel of Pond-Mud, and a Peck of rotted Cow-dung: stir all these together, and lay them up for Spring.

In this the Plant may be propagated by Cuttings, in the same Method we have directed for other *African* Kinds; but the best Way is to raise it from Seeds.

These need not be brought from *Africa*; for those which ripen here will very well do the Business.

They must be sown at the End of *February*, upon a moderate Hot-Bed, and the Plants rais'd in the usual Way, till they are large enough for potting; then they must be planted singly in Pots of a moderate Size, fill'd with the Compost, and shaded under a Frame, and water'd till well root-ed: after this they must be brought into a warm Part of the Garden, and set in the open Air till the Approach of Autumn, and then remov'd into the Greenhouse.

If they are thence taken into the Stove about the Middle of *October*, they will be brought to flower at this Season in greater Perfection, and with much more Lustre than older Plants.

Their Leaves thus are numerous and full of Vigour: the Stem is covered with them to the Bottom, which is not the Case in older Plants kept in the common Way; and the Number of Flowers, the Contrast of their gold yellow, with the silvery grey of the Leaves: and the red upon the Stalk, gives a consummate Beauty, no Part of which is seen on the Plant when starv'd and ill-manag'd.

4. SCARLET CYNOMORIUM.

Plate XVII. The *Vallisneria* itself is scarce a stranger Plant than this; and few have more Beauty. Were there Fig. 4. nothing to recommend it but the high Colour, and the Form, the Want of Leaves and scaly Armament, it would deserve all Notice; but there is N° 17.

a Singularity and extreme Prettyness in the faint Manner of its flowering.

Many of the late Botanists have nam'd it; but, till MICHELI, all with great Mistakes as to its Nature; and, till LINNÆUS, in its Class.

E c c

Its

Its Form, Substance, and want of Leaves, have caus'd them to call it a *Fungus*.—Boccone has nam'd it *Fungus Typhoides*—*Catstail Mushroom*; a Name not unaptly representing what is sometimes its Figure.

PETIVER has call'd it *Fungus Mauritanicus ruber verrucosus*.

MICHELI gave it the Name *Cynomorium*, which the Greek Reader, who observes its Figure and Colour, will find more expressive than decent; and this LINNÆUS has retain'd, as there is no other Species, without Addition.

The Plant is eight Inches high; and, under different Circumstances of Growth, it appears in various Forms; but, when the Soil and Situation favour its flowering, the Whole assumes a tolerably regular and constant Figure.

The Root is a light roundish and irregular Lump, lodg'd at a small Distance below the Surface: and, when it is imperfectly nourish'd, the whole Plant often lies upon, or in Part under the Mould, in several thick irregular Pieces, with large Heads.

Sometimes the Root lies naked in the Soil; but as it is easily disturb'd and thrown up from its Place, Nature has provided for its Security, by a Property it has of growing round about the Roots of other Plants, and incorporating them into its Substance.

Every one has seen how Straws and Blades of Grass are sometimes embodied in a Mushroom, that light and quick-growing Substance having surrounded them. In the same Manner the tuberous Bottom of the *Cynomorium* often surrounds the fibrous Roots of Shrubs, and sometimes grows to a large Part by its firm Substance, the Mark remaining when separated.

From this Root rises the Body of the Plant, small at the Bottom, irregularly thickning upwards, and at the Extremity somewhat less again.

At its first Appearance the whole Substance is covered with little Scales, thick set by one another, and of an oval pointed Form, sharper toward the Bottom of the Plant, and thinner upwards.

In this Form it stands a considerable Time, a Crimson Lump, shewing itself about three Inches above the Surface of the Ground; but when it rises to flowering, the Growth from that to its full Height is very quick.

This lower Part retains its delicate Crimson and thick scaly Covering, but the rest is of a fine Scarlet, lightly covered with loose and broader Scales, indented usually at the Top: these retain something of the Crimson Tinct of the lower Scales, while the naked Substance between them is of this fine Scarlet; and from this naked Part from under the Scales, and often without them, rise the Flowers, covering the whole Substance. These are very small, and of two Kinds, irregularly intermixt with one another, Male and Female; but they have few Parts, and are not very conspicuous.

There is no Corolla or Petalous Ornament.

The Male Flower consists only of a single Filament, firm, rigid, and of some Length; of a

pale Flesh-Colour, and terminated by a Button; split at the End, and seeming double. Dec.

As this Flower consists only of a Filament, the Female has no more of the Parts of a Flower, than a Style rising from the Rudiment of the Seed: this is firm as the Male Stamen, and of a duskier Colour, and it is terminated by an obtuse purple Stigma.

This is the Construction of the several Flowers: the Male are of short Duration, but the others, after some longer Continuance, leave behind a roundish shining Crimson Seed.

The Class of this most singular Plant is pointed out very obviously in the Description; or on a careful Observation of the growing Plant; it is the Twenty-first in the LINNÆAN System. That Class, under the Term *Monoecia*, comprehends all those Plants whose Male and Female distinct Flowers grow on the same Individual. This is plainly one of them, and one of the most singular.

Culture of the CYNOMORIUM.

Some have imagin'd this one of the Parasitical Plants, such as Mistletoe, which cannot grow except upon the Substance of some other; but this is not the Case; therefore there will require less Trouble than might be imagin'd to raise it. Due Warmth it will require, but nothing more.

It grows in the Greek Islands, and in some of the warmer Parts of Europe, on the Sea-shores, and also far on Land; so that neither is Salt-Water needful to its Support. The Seeds will grow freely enough; and from these Circumstances it will be found no Way incompatible with the common Culture of the Stove-Plants.

The first Article toward raising it must be to get good Seeds, and these should be obtain'd from the *Levant*.

The Plant is not uncommon in Italy, but it rarely flowers there, and scarce ever brings Seeds to Maturity. Therefore let them be had from elsewhere, and there will be no Difficulty; for the Plant is gather'd for Medicinal Use in those Islands, being a very powerful Astringent; and, in the drying, Multitudes of ripe Seeds fall out.

Let a Compost be made for these of two Parts Meadow-Earth, and one Part large coarse Sand; and let it be wetted a little with Brine.

On the Surface of this, in a middle-siz'd Pot, scatter some of the Seeds. Sift a little more of the same Compost over them, and place the Pot in a Bark-Bed in Spring.

Other Seeds should be also scattered upon the Surface in the Pots of two or three of the Stove-Plants, which rise with a single naked Stem; and there left to take their Chance.

Those in the proper Compost, and with the Advantage of the Bark-Bed, will shoot soonest; but 'tis not improbable the others will make the strongest Plants.

No particular Care need, after this, be bestow'd upon them: they may take their Chance among the other Pots of Stove-Plants; and, if they never flower, there will still be great Singularity

Dec. larity and Beauty in them; but if they do, there will be, beside their greater Elegance, the Certainty of continuing them; for their Seeds will not

fail to grow in the same Place where they have ripen'd.

Dec.

5. MAMILLARY CACTUS.

Plate XVII. Fig. 5. The Singularity of this Plant brought it early from the warmer Climates, into our *English* Gardens, and all the late Writers have celebrated it for the Peculiarity of the Form.

PLUKENET has called it *Ficoides*, and *Melocactus Mamillaris*; HERMAN, *Echino Melocactus*; and COMMELINE, *Ficoides*, *five Ficus Americana*. LINNÆUS who has done great good to the Science, by reducing this large Genus, called by various Names under one common Head, the *Cactus*; adds, as the specifick Distinction of this, *subrotundus testus Tuberculis ovatis barbatis*. Roundish covered Cactus, with oval bearded Tubercles.

The Root is divided, spreading, and full of Fibres.

The Plant bursts at once from the Surface, without Stalks or Leaves; in Form of a globular green Mass, with an uneven Surface: This rises in Height, alters its Form in nothing but that the whole becomes somewhat oblong, and the rough Surface breaks into more distinct Tubercles.

When arrived at the full Growth, it is seven Inches high, bulky, cylindrick; nearly of equal Thickness throughout; and at the Top flatted.

Its Colour, which was at the first Appearance an obscure Green, becomes now paler and brighter, and toward the Ground is often stained with Purple.

The whole Surface is composed of oval Tubercles, which are smooth on the Surface, clustered at the Base, and arm'd at the Top with a radiated Crown of brown and glossy Thorns.

This is a common Appearance of the Plant; and in this State it is extremely pretty.

The Flowers add little to its Beauty; their Colour is white, they are very minute, and they are placed among the Tubercles. But what the Flowers want in Elegance, Nature has given to the Fruits.

These grow gradually to a moderate Bigness after the Flowers have fallen, and when perfectly ripe, and of a fine Crimson lightly tinged with Purple. The Form is oblong, and from the End, there hangs a complex Fibre of a faint red Colour.

The Juice of this Fruit is Purple, and not ill tasted, and the Seeds mixed among it are small and black.

If the whole Plant be cut transversely, it is found to be composed of a tender Substance, not unlike that of an unripe Cucumber, and of a greenish Colour. The Taste is acrid, and there runs out a milky Juice from the exterior Part near the Bases of the Tubercles, more sharp in Taste, than the Flesh.

To know the Class of this singular Plant, the Student must carefully take off a Flower. Some Instrument beside his Fingers will be needful for this Purpose, for it is well defended by the Thorns of the Tubercles.

To have it entire, there should be cut out with it, the Top of the Rudiment of the succeeding Fruit to which it adheres.

There will be thus found a Cup tubular, and form'd of a single Piece, but beset with little imperfect scaly Leaves, arm'd with Prickles. In this is placed the Flower, composed of a great Number of narrow white Petals, which naturally converge at their Points; they are disposed in several Series: those of the inner Circle are always longest, and the several exterior gradually smaller.

In the Centre are placed a great Number of Filaments: they are inserted into the Cup: within the tubular Part of this is placed the Base of the Style, from which it rises single among the Filaments.

From this Examination, the Class of the Plant in the LINNÆAN System will be at once determined, the Number of the Filaments refers it to the Icosandrious Tribe, because they adhere to the Cup, not the Receptacle; and the single Style shews, that it is one of the first Section under that general Head the *Monogynia*.

The Filament that hangs from the Top of the Fruit, is the Remain of the Flower, and when tinged in any considerable Degree with red, 'tis owing to the Juice.

Culture of this CACTUS.

The Plant is a Native of the warmer Parts in *America*, where it covers the Surfaces of rocky Hills; the Seeds growing almost wherever they fall, and the Plants in undisturbed Places thence crowding upon one another.

The proper Soil we should give it here, is indicated by the loose barren Earth, in which it grows naturally in those Places, and the Climate directs the Degree of Heat.

It ripens Seeds freely with us under a proper Management; and may therefore be propagated by that Means.

But frequently without the Trouble of the Gardener, young Plants rise about the Base of the old one, from these Seeds dropp'd naturally; and nothing succeeds better than the replanting these.

The Compost I have found best suit its Growth, is this; a Bushel of dry Pasture Earth, half a Bushel of Sand, and a Peck of Marle, or in its Place so much soft Chalk, well broken to Pieces.

In

Dec. In this the Seeds are to be sown in Pots, with the Advantage of a Bark-bed, to assist their Shooting.

The Method in which they succeed best, is this: fill a couple of Pots with the Compost, when it is dry and well mixed. Strew over the Surface, some of the Seeds, and sift over them a quarter of an Inch of the same dry Mixture.

Set these Pots up to the Rim in a Bark-bed; and once in four Days sprinkle the Surface with a very little Water from a fine nos'd Pot.

When the Plants appear, let them be thin'd, so as to leave only three or four in a Pot; and allowing a few gentle Waterings, and by Degrees hardening them to the Air, they will be, in moderate Time, of a Size to remove into separate Pots: this must be perform'd with great Care; and the Plants by no Means bury'd in their lowest Part.

They must have a little Water; and by the Assistance of Shading in the Bark-Bed, they will

Dec. root well; and toward Autumn they must be taken into the Stove.

They must there have very little Water; and by this Means they will be brought to flower annually in great Perfection.

The common Custom is, to plant them in the Rubbish of old Walls, with Sand: a strange, ill-chosen, and unnatural Mixture! In this they grow but faintly, and are subject to rot in Winter; but in the Compost here directed, they will not only live, but thrive, as in their natural Country.

When young Plants appear in the Pots, about the Surface of the old ones, they always rise from fallen Seeds: they may be planted into separate Pots in the same Manner we have here directed for the Seedlings; and they will save the Gardener the Trouble of Sowing, and the Tedioufness of nursing up the Plants rais'd in that Manner.

6. SEA PANCRA TIUM.

Plate XVII.
Fig. 6.

The Botanical Writers became early acquainted with this elegant Plant; but we are not to expect that we shall find them early calling it by a proper Name. The Student knows already, that in the Bulbous Class, all was, to the Time of LINNÆUS, Confusion.

C. BAUHINE has describ'd this Species under the Name *Narcissus Maritimus*, Sea Daffodil.

CLUSIUS entitled it *Hemerocallis Valentina*; a Name more honour'd by the Observance of After-Writers.

MORISON has made it one of the *Lillio narcissi*, and LINNÆUS, a *Pancratium*. That Author adds, as the Distinction of the Species, *spatha multiflora, petalis planis foliis lingulatis*.

The Root is an oblong Bulb, white within, covered with a blackish Skin, and full of a thick Juice.

The Leaves are numerous, of an oblong Figure, moderately broad, flat, and of a blueish or greyish green.

The Stalk is round, thick, naked, of a whitish green, and a Foot and half high.

The Top is at first terminated by an oblong Scabbard; and that bursting discloses several Flowers, six or more, and those distinguished by their Size and Fragrance, tho' without the Advantage of a gaudy Colouring.

Each is supported on its separate Footstalk, all rising from the same Place, at the Head of the main Stem, and they fall gracefully into a large Tuft. They have no Cup beside the common Scabbard: this serves them all; and when it has burst, to give them Way, soon withers.

Each Flower consists of a wide expanded Nectarium, and six Petals. The Nectarium, resembling what is call'd the Cup in Daffodils, is form'd

of a single Piece, hollow, narrowest at the Bottom, broader to the Mouth, and at the Edge divided into twelve irregular Segments. The six Petals are inserted into the Body of the Nectarium, near its Base, on the outer Part; and they are long, moderately broad, pointed, and flat.

The Seed-vessel which follows the Flower, is roundish, but rais'd in three Ridges, and contains many roundish Seeds, in three distinct Cells.

The Filaments in the Flower are six; they are inserted on the Edge of the Nectarium, and are crown'd with oblong Buttons. The Style rises in the Midst of the Flower, and is crown'd with an obtuse Top.

The general Colour of the Flower is a Snow-white; but this is very beautifully variegated with green.

The Petals are more or less ting'd with a very pleasing green, from the Point downwards; and the Tip of the Nectarium is often touch'd in the same Manner.

The Filaments are white as the Body of the Flower, but their Buttons are yellow; and this not a little adds to the Beauty of the Whole.

The Scent is of the most fragrant and delicate Kind: it is the Sweet of the Lilly, but without its Faintness.

The Class to which this Plant belongs in the LINNÆAN System, is read obviously in the Flower. The Sixth, entitled the *Hexandria*, comprehends those whose Filaments are six; and the Style shews it to be one of the first Section under that Class the *Monogynia*; rising single, and little less conspicuous than the Filaments.



Prolifera
Mountain Crowfoot



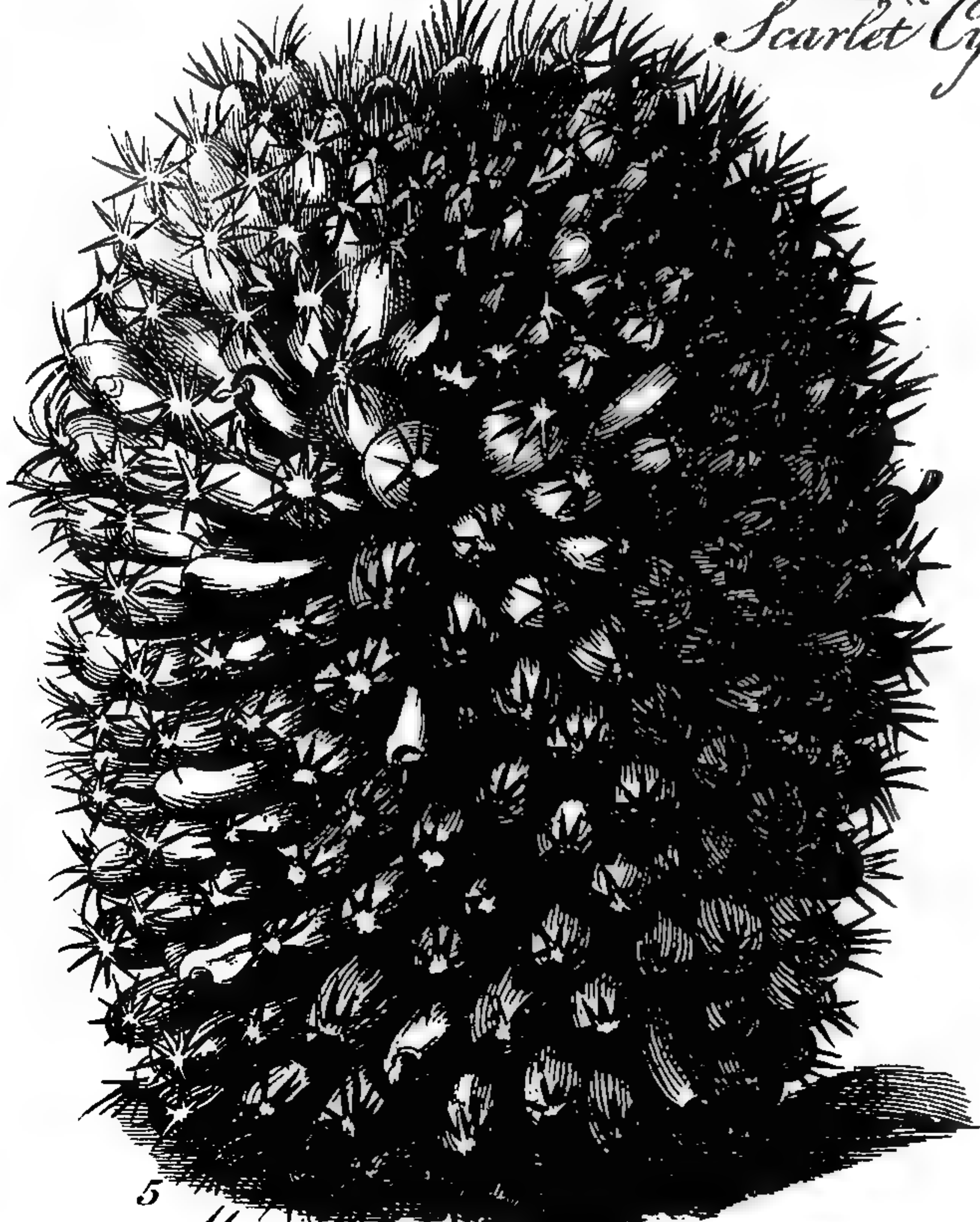
Pedinate leaved Othorpa



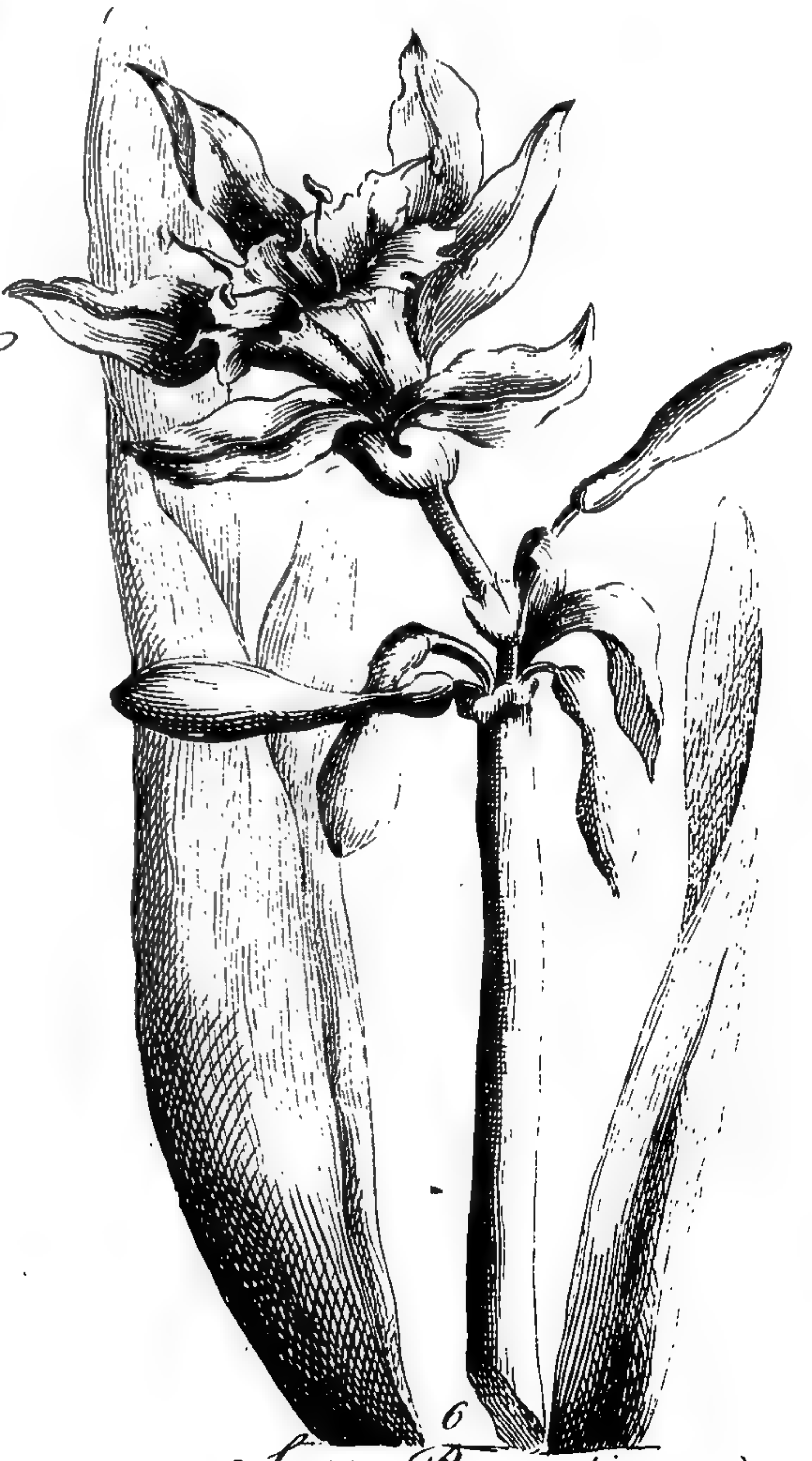
Scarlet Cynomorium



Spiral Vallisneria



Mamillary Cactus



Sea Puncratium

Dec.

Culture of this PANCRATIUM.

Less Care and Trouble are requir'd to raise this than most of the *Pantratioms* we have nam'd before: they were Natives of *Africa*; this is wild in *Spain*, and other of the warm Parts of *Europe*.

It grows naturally within the Influence of the Sea; and where there falls to its Share a mellow Bank, with some Sand among the richer Mould, it always succeeds best. This indicates its Culture; and the natural Climate shews what we owe to it in Point of Warmth.

The best and readiest Way of propagating it, is by Roots; and these may be either obtain'd from its native Countries, or parted from larger here. The latter Method is the slower, but it is the most certain.

The Season of taking up the Roots is in Summer, after the Leaves are decay'd. These may be kept some Months out of the Ground; so that there is no Difficulty in receiving them good

from Abroad: and whether they be procur'd this Way, or rais'd from Off-sers, the Method is to be the same.

Mix a Barrow of rich Meadow-Earth, and a Bushel of coarse Sand; strew over these a Peck of mellow Cow-dung, and two Ounces of common Salt: let this lie the Winter and succeeding Spring, and Part of Summer; and toward the Time of Planting, which should be in *June*, fill as many Pots as you intend to raise Roots.

Plant one carefully in each, and set it in a shelter'd warm Place, but not under the Drip of Trees. Once in four Days give these a little Water; and when the Shoot appears for flowering, bring them into a warmer and more open Place.

At the Approach of Autumn remove them into the Green-house, and they will flower in all their Glory.

The later the Roots are planted, the later they will flower; and by this Method some may be kept back, for a Season when the Scarcity of other Flowers gives them an additional Value.



C H A P. II.

The Management of the Flower-Garden, Greenhouse, and Stove.

OUR Directions in the preceding Weeks have left little to add with Respect to the open Ground, for the present; but there remains something for the Care of those Plants which are shelter'd and preserv'd by artificial Warmth.

All that need employ the Attention of the Gardener, in the open Ground, is the Care of his Flower-Beds; and what they require we have told him already, directing the covering them up, or giving them Air, as the Season, changing from more to less severe, shews necessary.

Let him look with a careful Eye over his Greenhouse and Stove-Plants. The Closeness of the Greenhouse, especially if he have been too free in Watering, will occasion Mouldiness on some of the more tender Plants. This will spread. It is a Growth of the Vegetable Kind, and none so quick in its Increase.

The Microscope discovers that all this Crust is compos'd of minute Plants, whose Seeds were first brought by the Air; and are easily scattered through the whole Building in the same Manner.

These are as quick in their Growth, as minute in their Proportions; and of the most common Kind in a Greenhouse, which has a globular ragged Head upon a pellucid Stalk, I have seen Plants rise to Maturity, and shed Seeds fit for Propagation, in the Compass of one Day, upon a Place before uninfected.

N^o 17.

The Gardener, thus understanding what Mouldiness is, will know the Necessity of guarding against it; and the Manner.

These Seeds of these minute Plants float every where in the Air; but they do not strike, unless where there is Heat and Moisture.

Therefore to prevent the quick Growth from accidental Seeds, let him take Care not to moisten the close Air, by too free a Watering of the Plants; and to destroy the Principle of Propagation in the particular Spot, let him carefully rub off the Mouldiness wherever it appears. As it is apt to rise again, in Places where it has been wip'd off, the most effectual Method I have found of preventing this, is, by wiping with a Flannel, wetted with a slight Brine. This done with Care, I have never once known to fail; nor ever saw any bad Consequence from it to the Plant.

The next Care must be, that the same damp Air which gave Rise to the Mouldiness, have not in any Part infected the Plants.

If Leaves appear faded, let them be taken off, when it is seen they can't recover; and let them not be thrown about in the Greenhouse, but taken away as soon as pick'd off, for they will else infect the Air in the same Manner.

Let this be the Practice also in the Stove; and let the careful Gardener, who sees the Extent of the Mischief, and knows its two Causes to be

F f f

Close-

Dec. Clofenefs of the Room, and too much watering the Plants, be continually guarding againſt both.
 Let him never fail to open his Windows in the Middle of a mild Day; and let him err on the ſafe Side, by giving his Plants at ſuch Times leſs Water than he knows they would bear.
 In the Stove let the Heat be carefully kept

up to a due Height, without exceeding thoſe Bounds; and let the Plants be water'd in Proportion; the more for the increas'd Heat, but always by a little at a Time.
 Many require no Moiſture at this Seafon, as we have obſerv'd; but for ſuch as we have directed to be water'd, let it be done moderately, tho' often.



S E C T. II.

The Buſineſs of the SEMINARY, for this Week.

THE whole Management in this Part is confin'd at preſent to a ſmall Compaſs; but there will, in a few Weeks, be Hurry enough in it; therefore let whatever can be done now, be duly executed.
 Let the Earth be turn'd which we have directed to be laid in Ridges; and a little Soot ſcattered over it with an even Hand. This I have found of great Service, and this is the beſt Time for doing it.
 The Rains waſh it in, and blend it well with the Mould before the Time of Planting; and it is by that Seafon in full Effect.
 It warms, looſens, and invigorates the Soil, giving Force to the firſt ſhooting of the Roots when new planted; and its Effect is, in a few

Weeks more, exhausted and loſt; ſo that it aſſiſts the Growth when moſt wanted, without permanently enriching the Ground, which is a Thing to be guarded againſt, with Care, in a Nurſery: for the Plants ſhould always find the Soil, to which they are remov'd, better than that whence they were taken.
 After this is done, let him look to his Seed-Beds of thoſe Kinds moſt in Danger from Vermin; and bait his Traps with the more Care, when he ſees any Hazard.
 Let him draw up the Earth, in mild Days, about his new-planted Shrubs; and ſee the Stakes of the reſt keep ſecure, that the Winds cannot rock them.



S E C T. III.

P O M O N A, or the FRUIT-GARDEN.

THE general Care of new-planted Trees is to be continued in this Part of the Ground: it conſiſts of only two Articles; and, as we have directed it at large before, needs but to be nam'd again here.
 They muſt be defended from the ſevere Froſts, by keeping the Ground about their Stems well cover'd; and from the Winds, by ſeeing that their Supports are ſecure.
 What requires at this Time the Gardener's moſt particular Attention, is, the Care of his Fig-Trees.
 We directed him, in the Autumn, to take off all the Fruit from the young Branches, which would otherwiſe have rotted upon them, and deſtroy'd them: and we advis'd him in the Severity of Winter, to defend the Trees, by hanging

before them ſome Mats, or other Covering, from the Froſts and cutting Winds.
 'Tis now he will find the Neceſſity of this Practice; and we are to caution him that he do not kill that with over Care, which would have had ſome Chance to eſcape, if left expos'd.
 The Principles of Gardening are the ſame in whatever Part of the Ground they are to be employ'd; and what we have explain'd ſo largely, reſpecting the Management of the Greenhouſe Plants, holds in all the Articles, of the Fig-Tree and its Shelter.
 The tender Branches would be deſtroy'd by the Froſt; but they may alſo be choak'd up by too conſtant Covering. The Buſineſs of the Gardener is, in this Caſe, as the other, to admit the Air

Dec. Air at Times, when it can do least harm; and to keep off that Severity which would be destructive.

This is not the common Practice of Gardeners, for they cover them all the Depth of Winter; and open them in Spring; but the Trees often suffer great Damage by that Method, losing the very Branches, which so much Care was taken to defend; the first cold Night after the Covering is taken away, destroying them; its Effect being the greater, by the too strict Defence before.

The Practice I have used, is this.

Where I have thought a Wall Fig-Tree in Danger, I have fixed a Piece of Matting to the Top, broad enough to reach to the Ground; and plac'd a Row of forked Sticks along the Bottom in the Ground.

The Mat has thus been rais'd, more or less, as the Severity of the Season required. Let the Gardener manage thus. Let him provide a Piece of Mat that will cover the Tree, and reach from the Top of the Wall to the Ground; and hang about eight Inches upon it.

Then let him set up the Row of forked Sticks, just where it touches; and at each End of the Mat, drive a firm Stick into the Wall, of two Feet long, and another of one Foot near it.

This will be a Preparation, by which the Tree may be sufficiently sheltered, and yet by Degrees opened to the necessary Air, as the Season will permit.

In the severest Weather, let the Mat fall over the whole Tree, and lay some Bricks upon the Edge of it, which lies upon the Ground so that no Wind can raise it: then see that it falls close at the Sides.

This will be a Defence against the very worst Weather; and it must only be used in such: at other Times, according as the Season grows more mild, the Sides may be left to play loose; the Bottom may also be at Liberty to

Dec. admit the Air, by taking away the Bricks; and there will thus be enough let in to prevent stifling.

When the Weather is milder, the Bottom of the Mat is to be rais'd on the forked Sticks; and when it is still more favourable, the Sides may be rais'd also on the shorter or longer Sticks, placed in the Wall for that Purpose.

These are the several Degrees; and in the better Days that came toward the Approach of Spring, the whole Mat may be turned up to the Top of the Wall during the three Hours about Noon.

Thus the Tree will be preserved through the Winter, without being choaked up; and the Admission of Air in this regulated Manner; will keep up the Principle of Vegetation; and the Juices will have their free Course, when Spring sends them up in the more large Manner.

The Tree will be preserved through the worst Weather, and will be in no Danger from the fresh Exposure of the Air in Spring, because it has been habituated to feel it by Degrees.

The particular Manner in which we have described this Method, is not to make any suppose it is attended with great Trouble.

In every good Garden, there are many Things which require to be occasionally sheltered from the Frosts, and exposed to the Air; and the Gardener is expected to go his daily Rounds for that Purpose.

This is one of them; and it will only share a common Care with the rest.

The Trouble will be little; and the Advantage greater than many are aware.

The early Appearance of the Fruit on this Tree is a great Article, and they will thus be forwarded vastly: the Quantity of them is the next Consideration; and this will be increased in the same Proportion: for the Protection the Tree has received during the Winter, gives Nature her full Power of producing them.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

WE have directed the Management of Artichoke Beds in a preceding Week, but the careful Gardener must from Time to Time look over the Business he has done, to see what Condition the several Parts preserve.

It is not enough Things are put into a good Way, they must be kept in it; and these are Seasons when a little Neglect may do a great

deal of Mischief.

Let him see that the Plants keep well earth'd up, for on that will depend their Preservation, and certainly their Forwardness in Spring.

Let him repeat all that Attention and Care we have directed for the Cauliflower Plants, which are under Glasses, giving them Air in the most favourable Hours to prevent their Decay; and co-

Dec. covering them perfectly in the worst of Days, and always at Night, from the Injuries of the Frost.

Let him take Care in the same Manner to give Air to his young salleting; for it will no more thrive on a Hot-bed kept close, than it will shoot in the exposed Ground.

I have found that the sowing it on a Hot-bed, arched over with Hoops, and covered with Matting, answers much better than under the too close Shelter of the common Frame.

This Week, if the Weather be tolerably mild, it will be proper to plant the several Cabbage Kinds for Seed; and there is no Plant that requires more Skill or Care in the Management, among all the Kitchen Products.

A great deal of Direction has been given about it, by those who treated these Subjects both in *France* and here; but to the *French* we are to allow great Preference, not only as they direct the several Parts of the Operation, in a more regular and distinct Manner; but as they pay a Regard to the fit Soil for the Purpose, which is a first Point, and is omitted by most of our own Writers, and ill directed by the rest.

The Plants intended for this Use, are now growing in their common Beds, and the first Care must be, to select the best of them. These are such as have the firmest and shortest Stems, and are most full of Vigour.

Let the Gardener mark as many of these as he intends to use, by small Sticks placed near them; and then taking the Advantage of a mild dry Day, let him take them up, and shake the Earth from their Roots.

Let him draw two or three Cords across some Room where there is no Damp, and which is not near any Fire; and winding a Piece of Bais round the Top of each Plant, let him tie them up to these Lines, at a good Distance from one another.

Dec. While they are hanging here, let him chuse a dry warm Part of the Kitchen Garden, and strew over the Ground a good Quantity of coarse Sand, and some Coal Ashes.

Let these be well dug in, and the Mould broke so as to mix thoroughly with them.

Let this be got ready four Days after the Plants were hung up, and on the Evening of the next let them be planted.

They should stand at a Yard Distance from one another, and a deep Hole being opened for each, the Plant is to be set in it, so that not above five Inches be above the Level of the Ground.

When the Root is carefully covered, the Earth is to be drawn up about the Top in a large Hill, and the whole covered, except the Head, from whence the flowering Stalk is to rise.

A great deal of Care must be taken of these: there must be a good Thickness of Earth about them in the rais'd Part; and they must not be watered: the Dampness naturally in the Ground is to the full as much as they will require. From this Time to the perfecting of the Seeds, nothing is more injurious than too much Water; if it be given when the Plants are first set, they will decay; and if afterwards, the Seeds will be less valuable.

Their future Management must be this. After six Weeks, the Ground must be well dug between them: this will at the same Time give them Nourishment, and destroy Weeds.

Till they begin to shoot in the Flower-Stem, they must have no Water: and after that Time, they must have it, unless the Season save the Labour, every third Evening.

The Water must be allowed but in a moderate Proportion; and the Ground between must have it all; for it should always be a Rule, to spare the Hills raised up about the Head of the Plant.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XVIII.

For the first Week in *JANUARY*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. The S N O W - D R O P.

Jan.
Plate
XVIII.
Fig. 1.

WE treat here of one of the most familiarly and vulgarly known Flowers of the Garden: but as it is familiar 'tis also universal; and we propose to leave no Article untouch'd, that can be useful to any concern'd with our Subject.

The Hardiness with which this Flower rears its Head among the Snow at the dead Time of Winter, if planted properly, and long before the earliest of Spring, however manag'd, give it a Claim to Attention; nor does it want Elegance to recommend it in the single State, much less in the double.

The Writers on Botany have all mention'd it, but under various Names; the proper Generical Distinctions in the bulbous Plants, having never been establish'd till LINNÆUS.

The older Writers call it *Leucoium bulbosum*; the later, *Narcisso-Leucoium*; and both join it with a very different Set of Plants, the proper *Leucoia*, which have a Flower of six Petals without a Nectarium; this having only three, with a conspicuous and elegant one.

On this Distinction in Nature LINNÆUS has founded a new Genus; separating it from the proper *Leucoium*, under the Title of *GALANTHUS*. To this he adds no distinctive Character; Numb. XVIII.

for of the Plant thus rightly understood, there is but one known Species; the double Flower it sometimes shews being only the Luxuriance of Nature from good Culture, as we have shewn on other Occasions.

The Root is a small Bulb, compos'd of many Coats or Skins, of which the outer one is blackish, the others white; and the Whole is full of a tough Juice. From the Base run many long white Fibres.

The Leaves and Stalks rise together, surrounded half their Length by a white filmy Scabbard: this is their Defence from Nature against the extreme Rigour of the Season wherein they appear.

The Leaves are long, narrow, and thick; and their Colour is a deep green, with a blueish Tinge. Two of these naturally rise more upright than the rest, to defend and shield the lower Part of the Stalk: the others spread farther and droop.

The Stalk is angulated, of a paler green, naked, and four or five Inches in Height. Its Top droops with the Weight of a single Flower, which bursts from an oblong flatted Scabbard, and appears too large for its tender Support.

This is compos'd of three Petals, and a Nectarium, consisting of three Parts, resembling so many more. Let the Student perfectly understand

Jan.

Jan. stand its Structure, that he may avoid the antient Error of confounding it as a Species of the same Genus with what is call'd the greater Snow-drop, properly a *Leucoium*.

The Flower of this Plant is compos'd, distinctly, of only three Petals: these are oblong, hollow'd, obtuse, and regular in Form and Disposition. The Nectarium, that stands within, is of a tubular Form, cylindric, and compos'd of three Parts: these are half as long as the Petals, and are obtuse and nick'd at the End.

The three Petals, composing the outer Part of the Flower, are of a pure Snow-white. The three Parts of the Nectarium, which are plac'd alternately with the Petals, are also white toward the Top; but they are ting'd near the Bottom with a yellowish green, in Form of a Heart; and on their inner Surface run many conspicuous and elegant green Fibres.

The Nectarium is of a firmer Substance than the Petals.

To know the Class, let the Student observe the Filaments: these are six; but they are so very short, that their Antheræ are the first Object which strikes the Sight. They are oblong, convergent, and terminated each by a kind of Bristle. These are of a fine yellow, and they add not a little to the Variety and Beauty of the Flower. In their Centre rises a pure white Style: and the Seed-vessel which follows, is roundish, and mark'd with three Ridges.

The six Filaments shew the Plant to be one of the *Hexandria* of LINNÆUS, a Class which comprehends most of the bulbous Plants; and the single Style shews it to be one of the *Monogynia*.

Culture of the GALANTHUS.

It is a Native of the *Alps*, and flowers there at the End of *January*, opening with the Sun-rise, and closing as he sets. Our common Culture brings it a Month sooner than in its natural Cli-

mate; and it may be thrown up earlier yet; even to flower in all its Glory at this Period, by due Care.

No Greenhouse or Stove, Bark-Bed, or Dung, are needed to this Purpose. A Plant that Nature raises on the *Alps*, may very well bear our natural Seasons.

The Roots are now so abundant, and are propagated so easily and readily by Off-sets, that it were idle to propose any other Method. The only needful Care is a proper Mould, and Situation of the Border.

For those intended to flower earliest, let a warm shelter'd Place be chosen, and let the Bed be made up with this Compost:

A Load of Meadow-Earth, half a Load of Pond-Mud, and a Quarter of a Load of coarse Sand, with the same Quantity of rotted Cow-dung.

Let these be well mix'd, and the Border be made up in the Middle of *August*.

Toward the End of the preceding *May*, let the Roots be taken up; and when this Border is well wrought, let them be planted at eight Inches Distance, and bury'd two Inches and a half with Mould. Let the Surface be rak'd over them; and thus let them remain till the End of *October*. Then scatter over the Bed a little Marle and Pigeons Dung mix'd together.

The Rains that follow will wash this in, and it will invigorate the Roots just when they are requir'd to shoot for flowering.

The Produce of Off-sets will be very great from these, and also from such as are planted in the common Way in Gardens; but as a Cluster of the Flowers is agreeable to the Eye, they should not be parted oftener than once in four Years.

The double Sort requires no other Culture, but should have the Roots parted every third Season.

2. JACOBÆAN AMARYLLIS.

Plate XVIII. From a common little Plant most valu'd for its Time of flowering in the open Air, we advance Fig. 2. to one which demands the Attention of the Curious, as a singular, and equally beautiful Kind: few exceed it in either Respect.

The Botanical Writers in general have nam'd it; for its conspicuous Elegance brought it early into the *European* Gardens; and none could pass it over unnotic'd.

Like the rest of the bulbous Class it has been call'd by different Names; but, till the great Reformer of the Science, so often mention'd here, and often celebrated, it was never properly referr'd to its Genus.

The earliest among those who have nam'd it, call it a *Narcissus*; adding *Indicus*, *Indicus ruber*, and *Jacobæus*.

DILLENIUS, and most of the later Authors, call it a *Lillio narcissus*.

Old PARKINSON thought, from the red Colour of its Flower, it ought not to be plac'd among the Daffodils; tho' in Observance of establish'd Custom, he rang'd it as one of them; and our Gardeners are not less remote from Truth than the most distant of these, in making it a Lilly.

With them its common Name is the *Jacobæa Lilly*.

Its proper Genus is the *Amaryllis*, whose Characters we have had more than one Occasion to explain before. Hither LINNÆUS refers it; and, for Distinction of the Species, adds, *spatha uniflora*, *corolla inæquali*, *genitalibus declinatis*: Single irregular flower'd *Amaryllis*, with the Filaments and Style declinated. To distinguish it by a single Word,

Jan. Word, he adds *formosissima*, most handsome. The Root is a large round Bulb. Its outer Coat is black.

The Leaves are long, broad, of a firm Substance, and of a deep green.

The Stalk, which rises on one Side of these, is round, but a little flattened, of a delicate pale red; and naked. On its Top appears an oblong filmy Scabbard, pointed at the Top, and of a somewhat deeper red than the Stalk.

When the Stem has reach'd a Foot in Height, this Scabbard bursts sideways, and discloses the wonderful Flower, whose Petals spread in their own Way, three drooping, two above them horizontal, and one erect.

Their Colour is the most perfect Scarlet; and in Form they resemble the broad Swords our Heralds draw in Armour.

Within this Flower, defended by the three lower Petals, appear six Filaments and a single Style.

The Filaments are Crimson, and have yellow Buttons.

The Style is of a paler Colour, fleshy, and split into three Parts at the Top.

The Middle one of the three lower Petals surrounds them half their Length; and this Petal is in the same Manner surrounded by the two which are next it, for more than a third of its Length; and as these turn downward, the Filaments bend upward.

The Seed-vessel which follows is of an oval Form, and in three Cells contains numerous Seeds.

The Clafs of the Plant is very conspicuous in this Structure of the internal Part of the Flower. The six Filaments refer it plainly to the *Hexandria*; and the single Style to the first Section under that Head, the *Monogynia*.

Culture of the JACOBÆAN AMARYLLIS.

The Plant is a Native of *South America*, whence we receiv'd the first Account of it from SIMON DE TOVAR; who, from the Resemblance of the Petals to the pictur'd Swords on Habits of the *Jacobæan* Knights, gave it this Name the *Jacobæan Lilly*.

In its native Climate the Plant thrives best and flowers most boldly where there is a rich Earth with some Moisture, and with enough Sand to make it always free and loose. This must be our Guide for a proper Compost; and the rest will

depend entirely upon the suiting our Warmth to its Climate.

Let a Compost be prepar'd thus:

Mix equal Parts of Pond-Mud, Wood-Pile Earth, and Mould, from under the Turf in a rich Meadow. To three Barrows of this Mixture, add two Bushels of coarse Sand, and one of rotted Cow-dung. This, after repeated Tryals, I have found raise the Plant preferably to any other natural Soil or Mixture.

The Method of propagating it, is by Roots obtain'd from *America*, or by Off-sets from those in our own Gardens; but of these, when it can be done, the former is vastly preferable. A Flower rais'd from an *American* Root, in the Compost here directed, exceeds the common Kind, beyond all that an unexperienc'd Imagination cou'd conceive.

We have said that the Heat we allow the Plant must be proportion'd to that of its natural Climate. Thousands of these Roots have been preserv'd when there were no Stoves; but they flower weakly. The regulated Heat of a Stove alone comes near that of the common Air in *South America*; and the Plant will never rise to its Perfection otherwise.

The very Period of flowering may be alter'd by this Management; and to this alone we can owe so glorious a Flower at so dead a Season. In Nature it throws up the Flower-stalk very irregularly; and this Way we take the full Advantage of her Wildnesses.

The Season for planting Off-sets is in the End of July.

As many Pots must be fill'd with the Compost as there are Roots; and they must be plac'd in these with Care, and cover'd an Inch and half above the Top. These Pots should be plac'd in a warm shelter'd Part of the Garden, and once in four Days gently water'd.

When the Shoot appears, they should be set among the Greenhouse Plants, then in the open Air, and water'd every other Evening. After this they must be remov'd early into the Greenhouse; and thence, at the Approach of Winter, into the Stove.

This is the Management of the full-grown Roots brought from *America*, as well as of the Off-sets rais'd here; and thus after having sent up a Flower-stalk on one Side of the Root, in September, they will shoot out another, at the End of November, from the other Side, and flower in the dead of Winter in full Glory.

Jan.

Jan!

3. WINTER WOLFSBANE.

Plate
XVIII.
Fig. 3.

Speaking of a Plant very familiarly known, we here, as on preceding Occasions, use its vulgar *English Name*; but we shall tell the Student at once how improper this is; and by what it ought to be call'd.

All the old Writers were acquainted with it; but determining the Genera of Plants more by their Aspect than proper Characters, they have call'd it by various ill-judg'd Names. Hence we read of it under the Title of a *Crowfoot* and a *Wolfsbane*.

The Name our Gardeners have for it, is the *English* of *Aconitum Hyemale*, by which the common Writers express it.

Others have call'd it *Aconitum unifolium flore folio insidente*; and *Ranunculus flore in medio folii*; Names expressing the particular Situation of the Flower upon the Leaf.

'Tis properly a kind of Hellebore. This MORISON saw, and nam'd it *Helleborus Ranunculoides præcox*: LINNÆUS and VAN ROYEN confirm this Determination; and add the peculiar Character rising from the Place of the Flower, as its Distinction from the other Species, *Helleborus flore folio insidente*: *Hellebore*, with the Flower fix'd upon the Leaf.

Those who call it *Aconite* were led to that Name, by an Imagination that the Plant was poisonous: but CAMERARIUS says, the Root in a small Dose is purgative; tho' in an Over-quantity it may do Mischief. This refers it to the Hellebores, even in Quality.

The Root is tuberous and irregular in Form; blackish on the Outside, fleshy, and of an acrid Taste.

The whole Plant above the Ground consists of a Leaf rais'd on a Foot-stalk, and crown'd in the Centre by a Flower. Many of these Stalks usually rise from the same Root; but all of like Kind and Composition, each being a separate and perfect Plant.

The Stalk is round, hollow, smooth, naked, whitish at the Bottom, and all the Way up greener.

On the Summit of this is plac'd a single Leaf. This is not join'd to the Stalk at its Edge, but fix'd upon it by the Middle, and is of a handsome Shape. The general Form is roundish; but it is very deeply divided into an irregular Number of long and narrow Segments, and these often split again at the Ends. The Colour is a fresh and lively green, but with some light Tinge of yellowish.

In the Centre of this Leaf is plac'd a single Flower. This has no Footstalk; it is large; and of a beautiful yellow, ting'd toward the Bottom often with a Cast of green.

The Flower is compos'd of six Petals, broad, oblong, obtuse, and naturally a little bending inwards.

This is its general Form and Figure; but there is that within which deserves particu-

lar Attention. There are in the Hollow of it, six Nectaria, singular and elegant in their Structure. Each is form'd of a single Leaf, tubular, short, narrow at the Bottom, and widening to the Top, where it opens inward with a gaping Mouth; and the whole six are plac'd in a circular Direction.

The Filaments which decorate the Centre are very numerous, slender at the Top, and crown'd with Buttons of a particular Form. They stand erect, not cross-wise, as in the last mention'd Flower; and they are oblong, compress'd, and broader toward the Top than at the Bottom. In the Centre of these rise several Styles, of a horned Figure, and terminated by thick Tops.

The Number of Styles shews, that to whatever Class the Plant belongs, it is one of the *Polyandria*. To determine of the more essential Article of the Class, the Insertions of the Filaments must be examined; for that is the Distinction between the *icofandrous* and *polyandrous* Plants; in each of which there are a Number of Filaments. They rise here from the Receptacle, and therefore shew the Class to be that of the *Polyandria*.

In the *Icofandrous* Tribe these Filaments grow to the Cup; but such an Insertion here would be impossible, for the Flower has none. It rises naked from the Leaf, or from the Summit of the Stalk, which serves at once as a Foot-stalk for the Leaf, and Pedicle to the Flower.

Culture of the WINTER ACONITE.

The Plant is a Native of the *Alps*, where, as in our Gardens, it accompanies the *Snow-Drop*, painting the Face of Winter, and foretelling the Approach of Spring.

From this we know, any Heat more than natural, in our Climate, would be of Disadvantage to it; and all that can be done to assist the flowering, is to adapt a proper Soil. This, with a favourable Situation, will, as in the Case of the *Snow-Drop*, forward its flowering, and give it more Lustre.

The common Garden-Mould, in which Custom now plants it, is too rich; and in most Places where it is more regarded, the Fault is extended, by the adding more Dung, by way of enriching that which was too rich before.

To bring it to the utmost Perfection, and make it flower early, let a Border be dug out, and fill'd with this artificial Soil:

Earth from a dry Pasture one Load, Marle two Barrows, Lime one Bushel, Sand three Bushels. Mix these well, and throw them up in a Ridge in the Border at Autumn. Thus let them lie all Winter and Spring.

In the Beginning of *May* spread the Soil, and lay aside as much as will cover the Roots two Inches, when plac'd in the Border.

The Roots are to be taken up in the second Week in *June*, and parted in the usual Manner. Then draw Lines lengthway and a-cross of the

new

Jan. new Border, each at ten Inches Distance; and in the Centre of every square, place regularly one large Root, or three of the smaller Pieces. Cover these with the Soil reserv'd for this Purpose, and give them a very gentle Watering. After this they may be left to Nature; for they are hardy and full of Life.

Those in the most favourable Situation

will flower earliest, and those in the other Parts of the Ground will come in afterwards as a Succession. Jan.

The Plant may be rais'd from the Seeds, which ripen very well with us; but it is not worth while to be at that Trouble; for the Roots encrease greatly, and grow freely.

4. DOUBLE COLCHICUM.

Plate XVIII.
Fig. 4.

Few Flowers are more conspicuous than that of which we treat in this Place; and few more beautiful.

The *Colchicum*, in its single State, has a great deal of Elegance. It has here all the Benefit of luxuriant Culture.

Most of the Botanical Writers have nam'd it; and whether in the single or double State, under its proper Title, *Colchicum commune*, and *Colchicum flore pleno*.

LINNÆUS retains the Generical Name, and adds, as a Distinction for the Species, *foliis planis lanceolatis erectis*: *Colchicum*, with upright, flat, spear-pointed Leaves.

It is one of those Plants whose Flowers and Leaves appear at different Seasons.

The Root is of a Figure approaching to round, but somewhat oblong and compress'd: it is small at the Top, and at the Bottom edg'd, and furnish'd with many white Fibres. The outer Coats are of a dusky reddish brown, but within, the Substance of the Root is white, fleshy, and full of a milky Juice.

From this, at the End of Autumn, rises the Flower, supported on no Stalk, but issuing immediately from the Substance of the Root, by its tubular Part, which rises to four or five Inches above the Surface before it begins to enlarge, and thence dilates into a vast and specious Flower.

The tubular Part is of a pale red, angulated, tender, and perfectly smooth. Authors who mention a Stalk to the Flowers of *Colchicum*, are to be understood of this Part of the Flower. CORNUS led the Way; and those have follow'd him, who had not the Attention to examine that Part with Strictness.

This slender and angulated Tube of the Flower, is defended under the Earth, and to its Surface, by a few filmy Substances, which keep off the Insect Devourers, whom its Juice wou'd otherwise draw to it; and preserve it from being rotted by the Damp.

At the Top it divides into six large and beautiful Segments: these are pointed, fleshy, hollow; and, where the Flower is single, they naturally stand erect; but when luxuriant Culture makes it double, the accumulated Segments in the Middle, bear down these outer ones, and only a few of them maintain themselves in the natural erect Posture. In this State the whole Flower is thrown beautifully open; and in Size, Colour, Proportion,

Nº 18.

and Disposition of the Parts, exceeds most of the Beauties of the Garden.

The Colour is the most delicate red that can be conceiv'd; it is a mixt Tinct of Crimson and Flesh-colour: usually very pale; but even in that State full of Lustre; sometimes glowing with a deeper and much richer Dye.

In the double Flower the Colour is naturally strongest on the Inside, paler without, and from the broad Part it grows gradually fainter all the Way down the Tube, till at the Bottom it is whitish.

The same Luxuriance of Nature, which in this Plant fills the Flower with Petals, usually sends up two or three from the same Root; whereas, in the single Kind, there commonly is but one Flower from each. This also is a great Recommendation; they form the fuller Beauty, and they last the longer.

There follows a three-parted Seed-vessel, with numerous rounded Seeds.

To know the Class, the Student must examine a single, not a double Flower: the additional Segments in these take the Place of the Organs of Fructification, or, at the least, confuse the Account. In the single Flower they are extremely conspicuous; and we have already told the young Botanist, the single and double differ only as Varieties from Accident, the Species being the same.

In this Flower he will perceive there are six Filaments: these are shorter than the Segments, and grow slender upwards. Their Colour is a delicate pale red; and on the Top of each is plac'd an oblong Button. Among these rise three Styles. They have their Origin from the Rudiment of the Seed-vessel, which is at that Time bury'd in the very Substance of the Root.

The Plant therefore is of the *Hexandrous* or sixth Class in the LINNÆAN System, and one of the *Trigynia*.

Culture of the DOUBLE COLCHICUM.

It is a Native of our Meadows, single, but not common. The Soil in which it thrives best, is a rich black Mould moderately damp; and there, in the Course of Nature, after the Flowers are faded, the Seed-vessel slowly ripens, and raises itself toward the Surface.

Early in Spring appear the Leaves; and they are broad, somewhat like those of the Lilly, and

H h h

of

Jan. of a deep green. They unite at their Bases and rise white to the Surface; and in the Centre of this Cluster appears the Seed-vessel, which does not acquire its full Maturity till after the Middle of Summer.

There can require no great Art or Industry to raise in Gardens the single *Colchicum*, which is a wild Plant in our Fields; but the double Kind demands and deserves some farther Attention.

The Seeds of the double Flowers do not always come to Perfection; for which Reason it is best to propagate the Plant by the Off-sets from the old Roots. These it produces in great Number, and they are easily manag'd. They require no Stove or Green-house for their Protection, in the common Method of Management; but it will be proper to pot a few of them, planting them later than the rest, for flowering at this dead Season.

The Warmth there is in a good Greenhouse, will supply all they require for their shooting; and they may thus be brought to their Perfection, when the Dearth of other Flowers will give them an additional Value.

The great Care in raising them, whether in the open Ground or Pots, is to give them a proper Soil. The common Mould of a Garden is too much enrich'd by Dung.

The Compost I have of late Years us'd, and

found very successful, is so cheap and easily obtain'd, none should deny it to them.

Mix a Load of black Mould from a rich Meadow, two Bushels of rotted Cow-dung, and one Bushel of Pigeons Dung: let these lie all the Winter, and be often turn'd: in Spring throw over them half a Load of Pond-Mud, and mixing them well afterwards, in the Beginning of August make up a Border in some cool and moist Part of the Garden.

Draw Lines lengthway and a-cross, at the Distance of eight Inches; and in the Centre of each Square plant one good Root.

These Roots should be taken up in the Beginning of June, and parted: after this they are to be kept out of the Ground till the Time just mention'd; and being then carefully planted, and cover'd two Inches with the same Compost, they will flower in all their Beauty.

Those intended for Potting are to be taken up at the same Time, and planted a Fortnight or three Weeks after, in the same Manner. They must be set in a shady cool Part of the Garden till the Beginning of October, and then brought into the Greenhouse; where, as the Flower rises, they must be gently water'd; and they will here hold in Beauty longer than in the open Air.

5. V A R I E G A T E D C O L C H I C U M.

Plate
XVIII.
Fig. 5.

The Student, whom we have taught to consider a Difference in Colour of Flowers of the same Name, as a Mark of accidental Variety, not a Distinction of Species, will stand surpriz'd to see us introduce a *Colchicum*, under the Name of Variegated, to his Notice, as a distinct Species. We are to tell him, that altho' the Variegation of the Flower, which is permanent and certain, be the most obvious Mark of Distinction in this Plant, the Leaves also have their peculiar Form and Appearance; that it is an absolutely distinct Species; native of another Part of the World, and will require a different Care and Culture.

Tho' a Native of the East, it came early into the European Gardens; and it is too conspicuous and elegant to have been overlook'd by any who wrote upon these Subjects: all since that Time have nam'd it; and under the same general and proper Title. CORNUTUS calls it *Colchicum variegatum*, a Name translated for the common Gardener. Others have call'd it *Colchicum Fritillarium*; the Variegation of the Flowers resembling that of the *Fritillary*: and others, from its Country, *Colchicum Chionense*.

LINNÆUS, forming his specific Name upon that real Distinction in the Leaves, which determines it a separate Species, calls it *Colchicum foliis undulatis patentibus*: *Colchicum*, with undulated spreading Leaves.

The Root is oblong and a little flattened.

The Leaves are broad, short, undulated, and

of a deep green, perfectly distinct from those of our *Colchicum*: but the great Singularity is in the Flower. This rises naked, as in the other Instances, long before they appear; and in Form it resembles that of the other Kind. Its tubular Part is long, and angulated; white at the Surface of the Earth, and thence upward clouded with a little red.

At the Top stands the Body of the Flower, form'd of six long and very beautiful Segments, colour'd in so singular and elegant a Manner, that no Eye ever pass'd it unobserv'd.

The Ground-Colour, or that diffus'd over the Body of the Flower, is a pale fleshy Crimson. Upon this are plac'd innumerable small square Spots of the most lively yet deep Blood-red; and along the Centre of each Leaf runs a Rib of white.

The Spots are dispos'd with great Regularity in some Flowers, so as to mark a kind of Lattice Work; but in these they are usually blackish.

The most perfect State of the Flower is what we have represented in the Figure; in which the middle Vein is very conspicuous, and the Spots are innumerable, but dispos'd with less Regularity.

In the Centre of this Flower stand six Filaments, as in the other; and there are, in the same Manner, three Styles. These Parts refer it to the same Class with the former, as all Species of the same Genus must be: but in the Culture there is an essential Difference. That is not to be suited to the Class of the Plant, but to its natural Clime and Soil.

Culture

Jan.

Culture of this COLCHICUM.

The natural Place of Growth of this Plant, is the *Levant*: and in the several Islands there; it is most frequently found in a close, but rich Soil.

Marle is common among the upper Strata of the Earth in those Islands, and 'tis where that is abundant, this elegant Flower rises in all its Beauty.

Therefore let a proper Compost be made for it here, by mixing equal Parts of Meadow Earth with Pond-Mud, with about one fourth Sand, and as much, or a little more Marle.

Let this be thrown together in Winter, and after repeated Turnings during that Season and the succeeding Spring, it will be fit for Use.

This is the Soil: and with Respect to the Propagation, it may be either from Off-sets, or from Seed. The best Method is by Seed, but the greatest Care must be taken to have it good.

With Respect to the Propagation by Roots, it is to be the same as in the preceding Instance; but in this, the Gardener has his Choice for various Degrees of Warmth: the Roots may be planted in a warm Border of this Compost, and they will succeed tolerably, but it is best to pot them.

They will flower much better, when taken into the Greenhouse; and best of all, if brought to it in the Stove.

In this Case they must have frequent slight Waterings; and the Mould should be drawn up about their Bottoms, as they rise in Height.

For either of these Purposes, the Roots are to be taken up as soon as the Leaves are decayed; and to be planted in the Beginning of *August*.

The Method from Seed is excellent for new Varieties; and the Plants so raised, answer all the Trouble by their Beauty.

To this Purpose, let fresh Seeds be procured, if possible, from the *Levant*; if otherwise, let them be saved from the choicest and best

stain'd Flowers here: and let them be sown in Boxes of the Compost just named, in the Beginning of *October*.

Let these be placed in a sunny Part of the Seminary during Winter: in Spring, let them have only the Morning Sun; and during Summer, let them be placed where there is Shade and Shelter.

All this Time the young Plants must be kept clear of Weeds; the weakest must be pulled up, where they stand too thick; and the Earth when dry, must have gentle Waterings.

When the Leaves decay, let the whole Surface of the Earth be stirred so lightly, as not to move the tender Roots, and let a quarter of an Inch of new Compost be scattered over them.

With this Management they will grow gradually, and at the Time when the Leaves are decayed, the second Year they will be fit for transplanting.

To this Purpose, let a Bed be prepared in a very warm and sheltered Situation; and well wrought up with the same Compost.

Let all the Mould be taken out of the Boxes, and sifted carefully thro' a fine Sieve; the Roots will remain behind, and they must be planted out into the Border immediately. 'Tis best to set them a Finger's Length distance, and to cover them an Inch with Mould.

Thus they will rise to the Condition of the other Roots, and they are then to be treated in the same Manner: Where there are all the Conveniences of Gardening, we should direct that the greater Part of them should be planted in a warm Border, and the Remainder potted; some for the Stove, and others for the Green-house.

By this various Management, the Gardener will learn an important Lesson, which he will find hold true universally: that altho' Plants from warmer Climates, will sometimes keep alive in the open Air, and flower in it; yet there will be no Comparison between such, and those kept in the Stove, in Beauty.

6. PROLIFEROUS DAISY.

Plate
XVIII.
Fig. 6.

WE shall in no Instance be able to produce more Proof of that Luxuriance to which Nature may be carried by a right Culture than the present.

The Plant we now propose to the Attention of the Student with all its Bigness of Flower and Fullness of Petals, with all its Offspring round about its Sides, is nothing more in Species, than the common Daisy of our Meadows, rais'd by various Degrees to more and more Lustre.

We shall endeavour to lead the Student thro' these several Stages, and he will thence learn how to consider other, the most unbounded Instances of Variation.

The common little Daisy of our Fields is sometimes altogether white; and sometimes edg'd with red. Of this, the Gardener took his first Advantage, and raising Seeds from the plain, white, and the red tip'd Kind, obtained two Varieties, a larger Flower all white, and a larger altogether red.

From the Seeds of these impregnated with one another's Farina, the Work of the Winds, not any Consultation of the Gardener, rose a third Kind, the pyed or variegated. Thus stood the Account, after the second Years of Culture.

But farther Management of the same easy Kind, produced in a Year more, the vast double
1 White,

Jan. White, the vast double red, and the double pyed Daisy.

These were extremely prized, till farther Excellence from the same Stock degraded them. The three Kinds were produced more double, with their Petals raised in Bubbles; and afterwards these twisting into a Kind of irregular Tubes, gave the quill'd Daisy, a very elegant Flower.

Thus long the Daisy kept its Form tho' double; but more Care and Culture burst the Flower into another Shape: instead of the original and natural circular Form, the Daisies of these three Kinds now burst their slight Cups irregularly, and spread into an unequal Flatness crested and waved.

This, as it appeared singular, was valued; and, tho' an Imperfection, became considered as a Beauty. And hence the Coxcomb-daisy, white red, and speckled.

Last of all, a better Culture of the great double red Daisy, instead of throwing the Flower out of its natural Shade, swelled it in that Form to a greater Size and Thickness, and raised from its Centre at the Footstalk, an Offspring of little Daisies supported on slender Pedicles, and making an outside Ornament.

This is the State in which we figure the Plant, and treat of it in this Place, under the Name of proliferous Daisy: the Gardener calls it Hen and Chickens.

LINNÆUS considering it as a Variety, names it under the Title of *Bellis hortensis prolifera*. Its distinctive Name with him in the common single State is, *Bellis scapo nudo*, naked stalk'd Daisy; but the same Luxuriance which in this Variety raises the Offspring about the parent Flower, pushes out some small Leaves on the Stalk.

The Root and Leaves resemble those of the original plain Daisy, except that they are larger, and every Way more luxuriant.

The Root sends out more Fibres; and the Leaves where they are most full, have the middle Veins a little redish; and are irregularly wav'd, or bluntly indented on the Edges.

The Stalks are numerous, tall in Proportion to those of the common Daisy, of a pale green, but a little redish at the Bottom, and sometimes naked; sometimes decorated with a little filmy Leaf.

On the Summit of each Stalk stands one principal Flower surrounded with five or six minute ones.

The central Flower is so large, the Stalk usually bends with it, and its Colour is red, more or less variegated with white: the little Flowers are paler. The Seeds are placed afterwards upon a swelling Receptacle.

To acquaint the Student with the Structure of the Flower in this Plant, we must refer him to its plainest and simplest State.

Here, as in other Cases, the Garden courts the Eye; but Botany is to be studied in the Fields.

The Flower, when no Part of it is altered or obliterated by Culture, is of the composite radiated Kind; and consists of two Sorts of Floscules. The Cup wherein it stands, is form'd of an ir-

regular Number of Leaves equal in Size; and the two Kinds of Floscules are disposed, as usual in the composite Kinds; the tubular which are most numerous in the Disk, and the ligulated, which are not a few upon the Edge.

The tubular Floscules contain both Male and Female Parts: it is in these therefore, that the Characters of the Class are to be read: the ligulated or flat have only the Female.

The Filaments in the tubular Floscule, are five, and their Buttons coalesce into a Cylinder. This shews the Plant is one of the Syngenesia, and as they ripen their own Seeds, as well as impregnate the Rudiments of those in the Female Flowers, the Plant is one of that Division, in which the various Impregnation is unnecessary, the *Polygamia Superflua* of LINNÆUS.

Culture of the PROLIFEROUS DAISY.

The original Method of producing those several Varieties we have named from the common Daisy, has been by Seed, and in that Manner they may still be raised by those who shall from Curiosity try the Experiment, beginning with the Seeds of the common Daisy, and every Year sowing those of the best Kinds that have been produced, with due Care.

This is an Article of great Consequence, as a general Consideration, tho' not with Regard to this particular Species; and we shall in a succeeding Number, give it at large under the Head of raising double Flowers.

At present our Gardens are so well stocked with all the Varieties, and this proliferous Kind among the rest, that it would be idle from any other Motive than Curiosity, to sow them.

They are increased easily, by parting the Roots; and always thrive the better for it: keeping their Kinds and Colours regularly under this Management; tho' when left several successive Years unremoved, they will by Degrees dwindle into a common Field Daisy.

No Compost is required for them, their own Earth in its best Condition answering the Purpose better than any Mixture: but to preserve them in full Beauty, this should be yearly changed.

For their first Reception, let there be chosen an East or West Border; for the South Sun and the Northern Chillness, are both improper.

Let there be laid in this a Quantity of rich pasture Earth, such as is of a firm Composition, and of the loamy Kind.

About the Middle of September, let this be got ready; and let some good Roots parted from a thriving Stock be set in it, at eight Inches distance.

Let them have Water if the Season be dry, and they will flower soon in Spring; and some at this more early Period.

After the first Plantation, nothing is required, but that the same Care be every Autumn repeated. Let the Roots be taken up at that Season: the Earth in which they had grown carried

ried



Snow Drop



Jacobean Amaryllis



Winter Wolf's bane



Proliferous Daisy



Double Colchicum



Variegated Colchicum



Blue Starry Hyacinth

Jan. ried away : and fresh Soil from a Pasture brought | planted, as at first; and they will from Year Jan.
 into its Place: In this let them be carefully | to Year improve, rather than decline.

7. BLUE STARRY HYACINTH.

Plate
XVIII.
Fig. 7.

There are several Kinds of the starry Hyacinth, which from their early flowering have the Name of Vernal; but this naturally rises earlier than most of them, and, with a little Art, some Roots of it may be brought to match their celestial Blue, with the clearest Sky at this Season.

The Botanical Writers of late Time all name the Plant, for since its first Appearance in the *European* Gardens in the Year Fifteen Hundred and Ninety, none could omit to celebrate its Beauty.

The *English* Name is a Translation of that by which it is commonly, tho' improperly called in *Latin*, *Hyacinthus Stelaris calureus*; to this, C. BAUHINE adds, *Amœnus*, on Account of its particular Beauty; others *Byzantinus*, from the Place whence we are supposed first to have received it; and others from the fine Blue of its Flowers, resembling that of the *Borage* Flower, *Flore Boragius*.

LINNÆUS much more distinct and accurate, separates this and the rest of the starry Kind from the other Hyacinths, and ranges them with the Squill. He gives in his specifick Name for this a Character of the Flower; he calls it, *Scilla radice solida Floribus lateralibus alternis subnatis*: solid rooted Squill, with the lateral Flowers alternate, and a little drooping on their Footstalks.

To those acquainted with the old Botany, there will appear something strange, even to Extravagance, in referring the starry Hyacinth to the Squill: but the Fault remains not with him who removed it to this Place, and called it by this Name, but with those who mixed it among the Hyacinths. The Error is not the less, because many have adopted it. The Flower perfectly agrees in all its Parts with that of the Squill; and has not the least Resemblance to that of the proper Hyacinth.

This influenced LINNÆUS to remove it from the Place in which it had so long improperly stood; and with this all the others: 'tis one of his happy Boldnesses in the Improvement of the Science; and those to whom it appears most rash, will on examining the Flowers find it perfectly just.

The Root is a large Bulb, roundish, white, fleshy, and full of a thick mawkish Juice.

The Leaves are long and narrow, pointed at the Extremity, and of a deep and elegant green.

The flowering Stalk rises to eight or ten Inches high, and is round, but a little ridg'd, juicy, and tender: of a whitish green at the Top; but towards the Base purplish.

The Flowers are numerous, and of a consummate Beauty. They stand in a handsome
No. 18.

Spike: they are placed on the slender Footstalks, and their Weight in warmer Seasons makes them droop a little; but it is not so with those which are brought to flower at this Period; nor much with any.

Each Flower is composed of six Petals, regular in Size and Shape, and naturally full spread open.

They are oblong, broadest in the Middle, and sharp pointed; and they are placed immediately upon the Foot-stalk, without any Cup.

The Colour is naturally a fine Sky-blue, but it is sometimes paler, and sometimes has a Glow of the Violet Purple: in the most perfect State of the Flower the Body of the Petals is of this celestial Blue; and there runs along the midst of each, a Line of bloody Purple, which diffuses itself in a more faint Tinge on each Side.

'Tis this which blending with the whole, gives the violet Purple to the entire Flower; but the most perfect Condition is, that it should be distinct.

In the Centre of the Flower rise six short Filaments of a violet Blue, and in the Midst of them a single Style; this is also of a violet Purple at the Top, but toward the Bottom whitish.

The Foot-stalks of the lowest Flowers are considerably long, and usually they are tinged with a pale Crimson. Sometimes in a very beautiful Manner.

The Class to which this Plant belongs, is read conspicuously in the Filaments and Style, the former being six, refer it to the *Hexandria*; and the single Style shews it to be of the first Section, under that Head, the *Monogynia*.

Culture of the BLUE STARRY HYACINTH.

The common Method of propagating this Plant is by Off-sets from the Roots; but for those who entertain the true Spirit of Gardening, and with Curiosity unite the Patience, the Business is to be done by Seeds.

This Method has the Advantage of raising new Varieties; and the other, the Disadvantage of spoiling the flowering: for when the Roots are frequently cleared from their Off-sets, they produce only a single Stalk; whereas, when they are entire for four or five Years, every Root sends up a whole Cluster of Stalks loaded with Flowers.

The best Soil for this Kind is this. Mix together a Load of dry pasture Earth, half a Load of Pond-mud, a Barrow of Sand, and the same Quantity of rotted Cow-Dung.

Let these be well blended, by often turning and exposing to the Air, during the Winter and the succeeding Summer.

In Autumn, let the Gardener prepare some
3 I Beds

Jan. Beds of this for such Roots as having stood several Years, require to be taken up and parted. and let him at the same Time fill some Boxes with it, for raising the Plants from Seed.

In the latter End of *September* let the parted Roots be planted in those Beds, covering them two Inches.

After this, they are to be sheltered in extreme severe Weather, and kept clear from Weeds.

The Seedlings are to be treated as other bulbous Kinds. The Seeds are to be covered only a quarter of an Inch at sowing; the young Plants must be kept clear from Weeds and Moss, and in Winter must have the full South Sun, but in the Summer, only the Morning Sun for two Hours.

When they are thus nurs'd up to the Time of planting, that is to be done in a Bed of the same

Compost, an Inch and a half deep, and at five Inches distance. Jan.

They will gather Strength quickly in this Place, and when they flower, there will be found a great deal of Variety. I have thus raised from the same Seeds, blue violet and white Flowers.

As soon as they have flowered, the worst Kinds must be taken up and planted in common Borders, where they will be less regarded. The fine ones will be thus kept together; they will be thinn'd so as to have good Room for Nourishment, and the succeeding Years they will send up three or more Stalks from every Root.

They must every Autumn have a slight Covering of fresh Compost scattered over the Bed; and be kept clear from Weeds at all Times.



C H A P. II.

The Management of the Flower-Garden.

WE have spoken in a particular Manner on many Occasions of the Art to prolong the Appearance of Flowers, by planting their Roots later or earlier than the common Time.

What we advised for the late mentioned Species, is now to be put in Practice, for many of those which are to paint the Borders for Spring, and the first Months of Summer.

Let the Gardener take the Advantage of a fine Day, and plant some *Ranunculus's*, and other the Spring Flower Roots. The Consequence will be, that when the rest are decayed and gone, these will come in Season, and continue the Spring Products to the Time of the Summer Flowers.

There will require more Care to be taken of these, than of such as are planted at better Times. But we expect our Gardener to be careful; and we shall tell him how he may ensure Success.

Many have try'd this Plantation, but have found it fail; Rains rotting, or Frosts destroying the new planted Roots.

Let our Gardener remember the Principles upon which we have established the Foundation of his Art, and he will know how to prevent these Accidents.

Rains cannot rot the Roots unless they lodge; and in a Bed tolerably prepared, they are not dangerous, except when the Roots are new planted.

As to the other Article, it depends for

its Force in a great Measure upon the first: a common Frost will be very destructive to Roots in wet Ground; but it must be a severe one indeed, that affects such as lie dry.

Let our Gardener dig up the Bed where he intends to plant these Roots, and spread over it a Mixture of one Part Coal Ashes, and two Parts Sand.

Let him tread this in, and then dig the whole over again, and let the Quantity of Sand and Ashes be as much as would cover the Ground an Inch and half deep.

Let him make the Bed, as for the Autumn Plantation, but plant the Roots half an Inch deeper, and round the Bed more at the Top to throw off the Wet.

This done, let him place some Hoops over it at a due Distance, that he can cover it upon Occasion; and thus leave them to Nature, only now and then sheltering them from excessive Rain, or defending them from severe Frosts.

This is to be done by two different Methods. The Shelter from Rain, must be by Means of a Mat drawn over the Hoops; and the Defence against Frosts is, by covering the Ground with Pea-straw.

Every Shower is not to be thus guarded against, nor every frosty Night; but only when either is in the Extreme; for on all common Occasions, the Dryness of the Soil, the round Shape of the Bed, and the Depth at which the Roots are placed, will preserve them.

Jan.

Jan.

S E C T. II.

The Business of the SEMINARY, for this Week.

THE Business of the Seminary will be now encreasing. There are many of the hardy Shrubs which must be sown in the Beginning of the succeeding Months; and for these Preparation must be made now.

Let a Piece of Ground be selected for this Purpose, that is open to the Morning Sun and not expos'd to the cold Winds. Bring on some fresh Earth from a dry rich Pasture, and spreading it an Inch thick over the Ground, dig it in. Then throw up the Mould all together in two Ridges, East and West, and thus leave it for the Air to moulder and impregnate.

After this, if the Weather be frosty, nothing more is to be done, but overlooking the Ground, and defending the several Crops, as we have before directed, by strewing Pease-straw over some, and drawing Mats or Cloths over the Hoops of the others.

If the Weather be milder, something may be done in pruning of the hardier Kinds of Trees.

A great deal of Art is to be employ'd for bringing the Shrub and Tree-Kind introduc'd into Gardens, to proper Form. There are many of them whose Leaves are a great Ornament; and, in some, the very Manner of Growth has its Beauty. In these Cases various Methods are to be employ'd, according to the Intent and Purpose of the Growth.

Let the Gardener consider whether the Design be to display wild Nature in a full Freedom of the Growth, or to train up the Shrub to Form.

In those Cases where the Manner of Growth is naturally beautiful, he has nothing to do but to take out dead, or turn aside ill growing Branches.

Nature's Wildness is usually attended with Irregularity; and the Business of Art, in this Instance, is to preserve the one without permitting the other to appear.

Therefore in those Shrubs intended for full Freedom of Growth, let him see if any Bough runs out in a bad Place too long for all the rest, and in that Case he is to take off the Top. If any where the Branches stand too close, let him take out a middle one from among them, or thin one of its Shoots; and finish this Work by making the Boughs in general, tho' ever so wild in their Disposition, run clear of one another.

This done with the wild growing Kinds, let him trim up the others to a Head; but let him always leave more of that than might appear just suitable to the Size; and let him leave also some small Shoots upon the Stems; for otherwise the Sap will not be drawn up in due Quantity.

In all these Things Moderation is the Rule: this let the Gardener observe strictly; for he who uses his Knife too freely, is worse than he who utterly neglects the Trees.

S E C T. III.

POMONA, or the FRUIT-GARDEN.

THIS is the Season for providing an early Crop of Strawberries: they will be very valuable for coming so long before the others; and the Expence and Labour are trifling. Some good Roots are to be potted for this Purpose, and their Fruiting is to be brought forward by a Hot-Bed: this is the general Business, but a great deal depends upon a proper Management.

In the first Place, there is one Kind that succeeds better than the others in this Method: this is the Scarlet Strawberry: therefore let the Plants be of this Sort; and it will be proper to mix three or four Pots of the great *Chili* Strawberry among them: these, with good Management, will succeed; and their Fruit, which is as big as a Pullet's Egg,

will make a fine Figure among the rest in a Desert.

Let as many middle-siz'd Pots be provided as will stand in a moderate Hot-Bed; bring in some dry Earth from under the Turf in a rich Pasture, and break in among it a little Wood-Soot, and some fat Marle; or, in Want of that, a little soft Chalk.

With this, when well mix'd, cover the Bottom of the Pots three Inches deep.

Let a Hot-Bed be got ready, and let Care be taken that it have an equal and a moderate Heat.

Let the Gardener take the Opportunity of the first mild Day, when the Earth is loosen'd from the preceding Frosts; to take up the Plants in this Manner.

Jan. Manner. He must mark the strongest Roots in his Scarlet Strawberry Beds, which he will easily distinguish at this Season, if they have been managed as we directed. The Pots must be brought to the Place, and these Plants taken up, by cutting in all round them, at some Distance, that each may come up with a large Ball of its own Earth.

If there be any bruised Roots, let them be trimmed off; and let the Plant, with its Ball, be placed upright in the Pot: then fill up with the Compost, and draw a little of it about the Head of the Plant, over the Surface of the other Mould.

This done to all the Pots, one good Plant being well fixed in each, set them all in a shelter'd

shady Place, for five Days, watering them gently every Morning, till they are thoroughly fixed in their new Earth. Jan.

After this, let them be set as close as they will stand in the Hot-Bed, bringing the Mould up to the Rim of them.

In tolerable Weather let them have Air; and let them be water'd often a little at a Time. This will bring them forward very fast; and the Heat of the Bed being kept up by fresh Dung at the Sides, when wanted, the Fruit will ripen in good Quantity, and be tolerably well tasted.

The *Cbili* Pots will require more Water than the others, and they should be placed at the Corners of the Bed.



SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

LET the Gardener's first Business, in this Part of the Ground, be to look over his Cauliflower Plants: he has taken so much Care of them hitherto, that it would be very idle to let them suffer thro' Neglect; and this is the Time when they are most in Danger.

Let him stir the Surface of the Mould within the Glasses, and dig it up round about on the Outside. Then let him take off any dead Leaves; draw the Mould a little up about the Stems; and in the Middle of the Day, unless when the Frost continues very severe, raise the Glasses by a Brick, and give them a little Air.

Let the Straw that has been laid upon the Mushroom Beds, to preserve them from Frost and Wet, be removed once in three Days, and fresh laid in its Place; for if it grow damp, and heat, there will be more Mischief from it than good.

We last Week directed planting the Cab-

bage Kind for Seed; and this will be proper for the Management of Endive in the same Way.

Let the Gardener dig up a Border in a dry Place, throwing on some Sand, and blending it well with the Mould.

Let him round it high, that no Wetting lodge on it, and then drawing Lines lengthway and across, at fifteen Inches Distance, let him plant one Root of Endive in the Centre of each Square.

These Plants are to be brought directly from their Bed to this Ground, with a Ball of their own Earth; and such must be chosen as are fullest of Leaves, and have them most curled.

Let the Mould be gathered up about each Plant, in a kind of Hill; and let the Bed have a little Water between them.

After this they will require only to be now and then water'd in very dry Seasons, and to have the Weeds always cleared away from between them.

EDEN:

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XIX.

For the second Week in *JANUARY*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Curious Plants and Flowers now in their Perfection.

1. HEART-LEAV'D BORBONIA.

Jan.

Plate
XIX.
Fig. 1.

THIS is one of the numerous Vegetable Tribe that owe some Part of their Beauty to the wild Manner of their Growth. None will dispute its Claim to Attention, for the hearted Leaves, its tufted Tops, and not inconspicuous Flowers: but the Eye of Taste regarding with these its general Face and Manner of Growth, declares it worth all Care in Management and Preservation.

The earlier Writers were not acquainted with this Plant; but of late Time many have seen, and all of them honour'd it with a particular Attention.

SEBA has nam'd it *Genista Africana frutescens* — COMMELINE, *Spartum Africanum* — and PLUKENET, acknowledging he knew not whither to refer it, *Frutex Aethiopicus foliis Rusci* — LINNÆUS, separating it from the Genera before-mention'd, names it *Borbonia*; and adds, as the Distinction of this Species, *foliis cordatis multinerviis integerrimis*. *Borbonia*, with heart-shap'd undivided Leaves, mark'd with numerous Ribs.

The Shrub spreads into many Branches, and is naturally but a Foot and half high.

The Root is fibrous and whitish.

The Stem is round, tough, of a greyish Colour, bent, irregularly upright, and full of Leaves.

Numb. XIX.

These, without Footstalks, grow to it in a regular Manner: their Base is the broadest Part; and in the Midst of that there is a Hollow for the Insertion at the Stem. From this Part they gradually grow smaller to a Point.

Their Colour is a beautiful green, with a Tinge of blueish; the Nerves run high upon them, and their Point is prickly.

From this main Stem run many Branches in perfect Irregularity. These are greyish near the Stem, and for the rest of a pale Crimson, which becomes grey as they grow older.

On these stand numerous Leaves; and on their Tops thick Tufts of intermingled Foliage and Flowers.

The Leaves in these Tufts are paler, and less regularly shap'd than on the lower Parts of the Plant.

The Flowers which take their Rise among them, exceed them in Length, and are in Colour of a very bright and strong gold yellow.

These are follow'd each by a Pod, which is terminated with a very sharp Spine, and contains a single Kidney-shap'd Seed.

Every thing about the Flower demands and deserves the Attention of the Curious.

Its Cup is form'd of a single Leaf, and divided

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into

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Jan. five Segments; of these the lowest is longer than the others; and they are all firm, harden'd at the Points, and prickly.

The Body of the Flower is compos'd of five Petals, and is truly papilionaceous. Its Form is singular, and on the Outside it is hairy.

The Vexillum is rounded and turn'd backward, and has a narrow Bottom of the Length of the Cup. The Alæ are shorter than the Vexillum, and are nip'd at the Tips. The Carina is form'd like a Crescent, obtuse, and compos'd of two Petals.

Within the Flower are plac'd nine Filaments: these unite in their Bodies, and form a Cylinder; and their loose Ends turn up: among these rises a single Style.

The Student will be perplex'd at this Disposition: he will not well know to what Place to refer the Plant in the LINNÆAN System, nor is there indeed any to receive it. Let us not fear to improve the Writings of an Author we respect, but as freely as we applaud, display his Imperfections to the Reader, that he may supply the Deficiency.

The Disposition of the Filaments in this Plant is the same with that of the nine in the *diadelphous* Tribe, but there wants the Tenth.

We have already shewn the Student, that in this Class nine usually form a long cylindric Body, which has an Opening at the Top, and there, a single one falls into the Slit. This is the Structure of the papilionaceous Flowers, and hence LINNÆUS calls them *diadelphous*.

Here there are the nine, they form the Cylinder, and they split at the Top; but there wants the Tenth to cover that Opening. 'Tis the Addition of this tenth loose Filament which constitutes the very Name and Character of the *diadelphous* Class: the Term expresses that the Filaments stand in two Assortments; one and nine. This is not the Case here, therefore the Plant strictly cannot be referr'd to this Class.

There is another Class, the *Monadelphous*, form'd for the Reception of those Plants which have the Filaments connected in their lower Part, into a single Body. This might receive the Plant in Strictness; but in that Case the *Borbonia*, which has a *papilionaceous* Flower, would be divided from the *Papilionaceous*, and plac'd among the *Malvaceous* Tribe, which are utterly distinct.

Nature abhors these Violations: and if we give into it, in the present Instance, 'tis not the *Borbonia* alone that must be remov'd out of its natural Place.

LINNÆUS retains it among the *Diadelphia*, tho' at the Expence of his Classfical Character; but this cannot be right. His Definition of the *Monadelphous*, is, *Stamina filamentis in unum corpus coalita*: of the *Diadelphous*, *Stamina filamentis in duo corpora coalita*.

As there are others of the *papilionaceous* Plants, beside the *Borbonia*, which want the loose upper

Filament, they are not *diadelphous*, while by their universal Form they are declar'd not of the *monadelphous* Kind, altho' their Filaments would speak it. Therefore there wants, in the modern System, a Class to receive those *papilionaceous* Plants which have nine Stamina united, and no loose one.

This I apprehend cannot be introduc'd without changing the present Terms.

The Word *Columnifera*, us'd by some of Character in Botany, very well receives the *malvaceous* or proper *monadelphous* Kind: this therefore may be us'd instead of *Monadelphia*; and two other Classes with other Names, abolishing the single *diadelphous*, may be form'd to receive those Plants whose Filaments unite and surround the Pistil; the one containing those which have nine Filaments united, and a single one loose above; the other, those which have the nine united, but not the single one.

The first would contain the common *papilionaceous* Plants, the other these.

Culture of the BORBONIA.

It is to be rais'd from Seeds. These succeed best when brought from *Africa*, where it is native; but the Plant will ripen them here, and they will grow freely.

In its wild State, at the *Cape*, it covers the Sides of sandy Hills, where there is rich Matter among the crumbling Mould; and never thrives so well as where it fringes the Bank of some trickling Spring.

This directs our Culture; and we shall succeed best if we give it a loose yet not poor Soil, and a good deal of Water.

Let the Compost be this:

A Barrow of Earth from an upland Pasture, a Bushel of Sand, and a Peck of rotted Cowdung.

Early in Spring fill a Couple of Pots with this, and leave the rest till wanted.

On the Surface, in these Pots, scatter some of the Seeds; sift over them a Quarter of an Inch of the same Compost, and set them up to the Rim in a Bark-Bed.

Now and then give a gentle Watering; and, when the Plants rise, repeat it oftener, and give them Air in the Middle of the Day.

When they have a little Strength, raise the Pots to the Surface, and give them more Air.

Soon after this, transplant the stoutest of them into separate Pots of the same Compost; and put these into the Bark-Bed, watering and shading them till rooted.

Then by Degrees bring them out into the open Air, among the Greenhouse Plants, and at Autumn remove them into Shelter.

They will not require the Stove-Heat in Winter; but, if preserv'd from Frost, and allow'd Air in the Middle of mild Days, will flower all the Year.

1

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Jan.

2. PURPLE STARRY SENECIO.

Plate XIX. This elegant Plant deserves its Place wherever Exotics are preserv'd. The singular Raggedness of its Leaf, and the Number and Beauty of the Flowers, demand Attention: and it has the Excellence of long Continuance in Lustre; for, with good Management, it will be covered with full-blown Flowers all Winter.

It was not known to the earlier Botanists; but of the later most have describ'd it, tho' under various Names. VOLKAMER calls it *Jacobaea flore amplo*. — COMMELINE, *Aster foliis Senecionis*. — LINNÆUS, who has very happily divided and arranged the composite flower'd Kinds, includes this under his Genus of *Senecio*. He adds, as the Distinction of the Species, *corollis radiantibus foliis pinnatifidis æqualibus patentissimis rachi inferne angustata*: Radiate-flower'd *Senecio*, with equal, expanded, and pinnatifid Leaves, the Rib narrower below.

The Plant is shrubby, tho' its upper Branches are tender; and rises with a wild Irregularity to a Yard in Height.

The Root is woody, spreading, brown, and hung with many Fibres.

The main Stem is of a pale brown, and the young Branches are green, and ridg'd.

The Leaves grow, without Footstalks, over the whole Plant, and they are of a singular Form; long, broad, and divided down to the Rib, or nearly so into many long and sinuated Segments. Those on the lower Part are more deeply cut than such as grow toward the Tops of the Stalks; and the Colour of them all is a fresh and pleasing green.

The Flowers cover the whole Plant when it is kept in Vigour, rising in Numbers from the Tops of the Branches. They are very large, of a beautiful Colour, between Crimson and Purple, and have a yellow Disk in the Centre. The Seeds which follow are wing'd with Down.

We have instructed our young Botanist in what Manner to examine the Composite Flowers, and he will therefore enter easily into the Construction of this; and as familiarly, by that proper Enquiry, find the Plant's Class.

The Cup he will perceive to be compos'd of numerous Scales, in several Series: this distinguishes it from the *Othonna*, whose Cup is of one Piece, only divided at the Edge. Within this he will find a radiated discoide Flower; that is, a central Disk of collected Floscules, surrounded by numerous splendid Rays.

We have inform'd him, that in these Flowers

there are two Kinds of Floscules, the one containing the Male and Female Organs of Impregnation, the others only the Female. Those of the first Kind are perfect; for in the Vegetable Kinds the Hermaphrodite is the perfect Production.

Let him take from the Centre of the Disk one of these, and he will find it tubular, wide at the Mouth, and there divided into five Segments, which turn backwards. Within this he will see five very small Filaments, whose Buttons form a Cylinder.

This is the Character of the syngenesious Tribe; it therefore shews the Plant is to be referr'd thither: but there requires yet a farther Attention to the Parts, to know under which of the several Sub-divisions of that Class it is to be arrang'd.

The female Floscules which surround these perfect ones at the Verge, are oblong, and slightly divided into three Points at the Extremity: these have the female Part, as in the others, which is a Rudiment of a Seed with a single Style; and after these, and the tubular or hermaphrodite Flowers equally, there are produc'd ripe Seeds.

The Dust from the Buttons of the tubular Flowers impregnates their own Rudiment, and also this; hence the Name *Polygamia*: and as there are ripen'd Seeds under the tubular Flowers, this is of the *polygamous superfluous* Kind.

Culture of this SENECIO.

It may be propagated by Cuttings, or rais'd from Seeds: the former is the easier Method, but the latter produces the handsomest Plants: we therefore prefer it; and there is little Trouble.

Let the Seeds be sown upon a common Hot-Bed; and when the Plants have been once transplanted, let them be set in Pots of Garden-Mould. Let these be plac'd under a Frame, and shaded and water'd till they have taken Root.

After they have got some Strength in the Pots, let them be brought out in the Middle of a fine Day, and stand the Summer among the hardier Exotics.

At Autumn let it be remov'd into the Greenhouse; and there let the Gardener give it Air, and water it often; and let him observe always, as the Flowers fade, to take them off, that none may set for Seed, unless where that is wanted: thus it will continue in full Glory thro' the severest Season, and be one of the greatest Ornaments of the Place.

Jan.

Jan.

3. LONG-LEAV'D OTHONNA.

Plate
XIX.
Fig. 3.

We propose here to the Gardener's Care a Plant not so conspicuous as many others for its Flower, but very well worth a Place, from its regular and beautiful Manner of Growth.

The Generality of Authors who have nam'd it, call it a *Jacobaea*, but improperly: the Cup which is simple, not scaly, shews it an *Othonna*. This we explain'd at large under the preceding Head.

COMMELINE, who receiv'd the Seeds from *Africa*, under the Name of those of a *Centaurea*, call'd the Plant he rais'd from them, *Jacobaea Africana frutescens folio longo & glauco*. — LINNÆUS, *Othonna foliis hastatis integerrimis*: *Othonna* with spear-headed undivided Leaves.

The Root is white and fibrous.

The Plant rises in an erect and regular Growth to four Foot in Height. The Stalk is round, hard, in some Degree woody; smooth on the Surface, purplish toward the Base; and, in the rest of its Height, of a whitish green.

The Leaves are very long and beautiful: they grow to the Stalk by a hollow Base; and from that Part where they are broadest, diminish to a Point. They are lightly and irregularly wav'd or sinuated, and their Colour is a fine blueish green.

The Flowers are plac'd in great Tufts at the Tops of numerous Branches, which rising from the Bosoms of the upper Leaves, form, in the Whole, a broad and spreading Umbell. They are small, and of the composite radiated Kind. Their Colour is yellow; paler in the Rays, and deeper in the Disk, but every where very elegant.

The Seeds which follow these are wing'd with Down.

The Cup in which each Flower stands, we have observ'd is form'd of a single Piece, deep cut into Segments at the Top: these are about twelve, and they are narrow and pointed.

The Flower itself is compos'd, as in others of

like Kind, of two Sorts of Floscules: those in the Centre of the Disk are the most perfect; they are tubular, and nip'd into five Segments at the Edges; and in each of these stand five Filaments, with coalescent Buttons. This shews the Plant one of the *Syngenesia*. The ligulated Floscules at the Edge have only the Rudiment of a Seed and its Pistil.

There are also these Parts in the tubular Flowers; but from some Imperfection in their Structure, the Seeds plac'd under them rarely ripen. Therefore the Impregnation of those plac'd under the ligulated Flowers, is not superfluous, as in the preceding Instance, and consequently the exact Place of the *Othonna* in the LINNÆAN System, is among the *Syngenesia Polygamia Necessaria*.

Culture of this OTHONNA.

It is a Native of the *Cape of Good Hope*, and there thrives best in a loose moist Soil. Its Culture therefore with us is plain, from the Principles of Gardening laid down in our preceding Numbers.

Let the Gardener mix a Barrow of Meadow-Earth, half a Barrow of Pond-Mud, and a Bushel of Sand.

In a Pot fill'd with some of this Compost, let him sow the Seeds, obtain'd from *Africa*, or ripen'd here, early in Spring. Let the Pot be set up to the Rim in a Bark-Bed; and when the young Plants rise, let all, except three or four, be pull'd up.

Let these, by frequent Waterings, be brought to a Height fit for Transplanting; then let them be plac'd each in a separate Pot; and again set in the Bark-Bed till rooted. Then let them by Degrees be inur'd to the Air. Let them be set out in Summer, among the Greenhouse Plants, and at Autumn taken into Shelter with them. They will flower in Winter.

4. CANARY SHRUB SAINT JOHN'S WORT.

Plate
XIX.
Fig. 4.

The Profusion of golden Flowers that cover this Shrub, cannot fail to claim for it a Place among the most valu'd Exotics.

Most of the late Writers have nam'd it, and all with Praise.

COMMELINE, from the Abundance of its Flowers, calls it *Hypericum Canariense multiflorum*. — PLUKENET, *Androsæmum magnum Canariense*. — LINNÆUS, *Hypericum floribus trigynis, calycibus obtusis, staminibus corolla brevioribus, caule fruticoso*: Shrub *St. John's Wort*, with obtuse Cups, with three Styles in the Flower, and the Filaments shorter than the Petals. — A long Name, but not unneedfully so: the *Hypericums* are numerous, and

Nature wantons in those Parts of Impregnation on which the modern Science rests.

The Shrub is a Yard high, and variously branched. The Root is woody, spreading, and hung about with Fibres.

The main Stem is brown, and the younger Branches are ting'd with purple. The extreme Shoots are green and square; but when they have stood a little, they lose the Ridges and that herbaceous Colour.

The Leaves are oblong, broad, and of an elegant green. When held up against the Light they are of an entire Substance, not full of Millions of Holes, as the common Kinds of *St. John's Wort*.

Jan. Wort. These grow in Pairs on the lower Parts of the Plant; but with less Regularity towards the Top.

The Flowers are innumerable, very large, and of a fine gold yellow. They stand all over the Tops of the Branches. Each Flower has its small Cup, form'd of five little oval Leaves, united at their Bases; and is itself compos'd of a like Number of Petals: these are oblong, expanded, and obtuse. In the Midst rise a vast Multitude of Filaments, tip'd with golden Buttons; and in their Centre three Styles. The Seed-vessel which follows, has three Cells, and contains in them many Seeds.

The Student tracing these numerous Filaments to their Base, to find whether they be inserted on the Receptacle, or into the Cup, the Distinction of the *icosandrous* and *polyandrous* Class, will, with an agreeable Surprise, perceive they are united into several Clusters: counting these, he will find they are five; and he will thus see the Plant belongs to a Class, concerning which we have not before found an Opportunity to speak. This is the *Polyadelphia*, the Eighteenth in the LINNÆAN System.

This, according to its Name, comprehends those Plants in whose Flower the Filaments are connected into numerous Assortments; and as in this Plant these Filaments are in themselves numerous, and have their Origin from the Receptacle, it belongs to the third Sub-division under that Class, and is one of the *Polyadelphia Polyandria*.

Culture of this HYPERICUM.

In the *Canaries*, where the Plant is native, it thrives best in a loose rich Soil, where there is sufficient Moisture. From these Circumstances the Gardener will fall into a proper Method of its Culture; and it is to these he is on all Occasions to pay Regard; neglecting the Instructions given in common Books, the Fancies of their Authors, or of those whence they transcrib'd them.

This, tho' a Native of a warmer Climate than our own, will endure our Winters in the open Air; but let the Gardener so far consider its Place of Growth, as not to put it into the open Ground at Random; but select for it a warm and well defended Part of the Garden. There let him open as many Holes as he intends to have Plants; and taking away the common Mould, fill up with this Compost.

Mix equal Parts Meadow-Earth and Pond-

Mud: add to these about one fourth of rotted Jar. Cow-dung, and the same of Sand: mix them well together.

The Holes being fill'd with this Compost, the Shrub may be either rais'd in them by Seed, or remov'd into them from the Nursery, where it has grown from Cuttings; for these will succeed with the common Care if planted in Spring: but neither of these Methods is so easy or successful as the planting Suckers.

These are produc'd in Abundance from the Shrub, where it has stood any Time in a thriving Condition: and the Season for taking them off is the first Week in *April*.

They may either be planted in the Nursery, to take their first Growth, or at once where they are to remain. The first is the common Practice; but the latter is much the better Method.

They have nothing unpleasing in their Aspect while young; and they will always grow up in the best Manner, when they have no Removal after the taking them from the Root of the old Plant.

Upon these Principles let the Gardener fill up his Holes with the Compost, in the first Week of *April*; and soon after chusing a showery Day, let him, in the Evening, carefully take off as many Suckers as he wants, planting one in each Hole.

Let him give them a gentle Watering; thrust down a short Stick near each, and tie the Sucker to it with some Bais: then every Evening let him water them all gently till they are well-rooted. They will take freely to the new Ground; and thus the Foundation will be laid for so many handsome Shrubs.

At the same Time that these are planted into the open Ground, let a few be put into Pots of the same Compost. These are intended for the Greenhouse; where, by taking off the Flowers as soon as they fade, there will be a Succession much longer than in the open Air.

As these Suckers grow up into Trees, the Gardener must take Care to keep them in good Form; and every Year look over them, with his Knife in his Hand, to cut away such Branches as grow irregularly or cross one another, and to shorten those which are too luxuriant.

The Suckers must be also clear'd annually from the Root, whether they be wanted for planting or not, because they weaken the Shrub; and the Ground at Times must be dug round about the Stem, and always kept clear from Weeds. Thus it will flower as freely as in its native Country.

Jan.

Jan.

4. WOOLLY HERMANNIA.

Plate
XIX.
Fig. 4.

This is a Plant of very singular and agreeable Aspect: the Form and Colour of its Leaves, the natural Wildness of its Branches, and the Disposition of its Flowers all please the Eye extremely.

The earlier Writers were not acquainted with it: and those who first described joined it rashly with the Ketmias. COMMELINE calls it, *Ketmia Africana frutescens foliis mollibus & imanis*. PETIVER distinguished it by a new Name, *Hermannia*, and under this it stands described by LINNÆUS, VANROYEN, and the rest of the modern Botanists. The first adds as the Distinction of the Species, *foliis ovatis plicatis Crenatis tomentosis*: *Hermannia* with oval, woolly, folded and crenated Leaves.

The Plant tho' shrubby, is but of low Stature: two or three Feet is its utmost Height.

The Root is divided, white, and hung with Fibres. The Stem is brown: the Branches which spread variously, are whitish, tender, and covered with a soft Down.

The Leaves stand upon these in perfect Irregularity; they are oblong, deeply sinuated along the Edges, and of a whitish green, covered thick with a soft downy Matter, which makes them feel like Velvet.

The Flowers are very numerous, and of a singular Aspect, they grow at the Tops of the Branches, and on Footstalks from the Bosoms of the Leaves, two or three on each.

They are large, they droop, or hang downwards; and they are twisted. Their Colour is a very delicate pale yellow.

These rise from a downy Cup, and at the Base of their Foot-stalks are placed regularly three oblong, narrow, undivided Leaves.

The Cup is formed of a single Piece, swelled at the Base, and divided at the Rim into five Segments.

The Flower itself is formed of five oblong Petals: these spread at the Mouth, and turn toward the Sun; and at the Base they grow very small, and have on each a Membrane running sideways, which together form a nectiferous Tribe.

In this Flower stand five Filaments, which lightly cohere at the Base, and among these rises

a Stile, which exceeds them in Length.

The Seed-vessel is roundish, but has five Ridges. The Seeds are numerous and small.

The Number of the Filaments must not in this Case determine the Class, but their Coalescence into one Body at the Bottom.

The Student knows this is the Character of the monadelphous Tribe: and this Plant belongs to the first Division of that Class, those which have five Filaments: that being the smallest Number that is found ever to coalesce at the Base.

Culture of the WOOLLY HERMANNIA.

The Plant is a Native of *Africa*, where it thrives best in a Soil that is loose and free; not too rich, and with some Moisture.

This must be our Indication of its Culture. Let a Compost be made for it thus.

Mix a Barrow of Earth from a dry Pasture, a Barrow of Pond-mud, and a Bushel of Sand. Turn these several Times, that they may be well blended, and have the Benefit of the Air.

In this Soil, the Plant may be propagated either from Seeds or by Slips; but the Method by Slips, I have always found to be the best; and that for a plain Reason.

The Seedlings are to be transplanted, and they do not well bear it.

If any Way of Sowing be proper, it is to scatter a few of the Seeds upon some of this Compost, in a Pot, and covering them lightly, to leave them to shoot in a Hot-bed; and then pulling up all in each Pot but the strongest Plant, to harden that to the Air by Degrees, without removing.

In the Way we propose by Slips, we shall direct the Gardener to put some of the Compost into Pots, and to place some in two or three different Spots of a dry, warm, and well sheltered Border.

Let the Slips be shaded and watered carefully till they have taken Root; and they will thus come the second Year to flowering

5. SAMPIRE LEAV'D SANTOLINA.

Plate
XIX.
Fig. 5.

This is a very handsome, as well as singular Plant. The Leaves are unlike most of those of the Greenhouse Plants, and the Flowers though singly very trifling, stand in such Clusters that they attract the Eye and satisfy it.

PLUKENET and COMMELINE have figured it; but both under improper Names. The first calls it *Jacobæa foliis abrotani*; — the other *Coma aurea foliis Cithmi*. LINNÆUS who has deserved greatly

of the botanical World, by properly arranging the syngenesious Plants, makes this a *Santolina*.

He adds as a Distinction of the Species, *Corymbis Simplicibus fastigiatis, foliis semitrifidis linearibus*. Narrow and trifid leav'd Santolina, with simple fastigiated Clusters of Flowers.

It is a Shrub of six Feet high. The Root is woody and spreading. The Trunk is firm and upright, and is covered with a rough Bark of



Heart leaved Borbonia Double Starry Senecio



Purple Starry Senecio



Long leaved Othonna



Canary Shrub Saint John's Wort



Woolley Hermannia



Sampire leaved Sautolina

Jan. of a pale brown.

The Branches are numerous, and the young Shoots are of a pale green, ting'd with red in some Parts, especially at the Insertions of the Leaves.

These are small and irregularly divided, principally at the Ends, into three Segments: They are of a pale, but agreeable green, and as they fade, often become redish.

The Flowers terminate all the Branches, in round simple Tufts: they are of a beautiful yellow, and of the composite, but not radiated Kind; several tubular Floscules being arranged in a common Head, and a Number of these Heads each placed upon its separate Foot-stalk, constituting the Cluster.

Let the Student take this Opportunity of settling in his Mind the essential Distinction of the naked and radiated Flowers of the composite Kind.

These several Floscules which make one of the single Heads, have their common Cup, and resemble those in the Disk of the Senecio and Othonna, described in this Number, in all Respects, except that there wants the radiated Ornament.

'Tis therefore these are called naked composite Flowers, and those radiated.

The Cup in which these stand is of a hemispheric Figure, and is composed of oblong, pointed, and convergent Scales, placed in great Numbers over one another.

The Body of the Flower, exceeds this in Length, and is composed of numerous Floscules, equal and regular disposed.

We have before informed the Student it is in these Floscules singly he is to seek the Parts of Impregnation, and to learn the Class of the Plant: in this Species they are larger than in most others, and their Parts more distinct.

Let him separate a single Floscule, and he will find it hollow, expanding to the Mouth, and there divided into five Segments, which turn back. Within the hollow, he will perceive five short Filaments, whose Buttons are oblong, and coalesce in a tubular Manner: this is the Mark of the syngenesious Class.

The Seeds ripen under all the Flowers, and are winged with short Down. They are placed upon a flattened Receptacle, covered with hollow chaffy Substances.

Jan. In this Plant, the Floscules could singly perform the Office of ripening their Seeds, for each has all the necessary Organs: they mutually impregnate themselves and one another: therefore the Section to which the Plant belongs, is that of the *Polygamia equalis*.

Culture of this SANTOLINA.

The Plant is a Native of *Africa*, but it is one of the hardier Kinds of that Climate, for it will live the greatest Part of the Year with us in the open Air, and only requires to be sheltered from Frosts in a Greenhouse during Winter.

The Soil I have found agree best with it is common Pasture Ground, with about one fourth Part Pond-mud, and a little rotted Cowdung.

In this it may be raised from Seeds, but that Way is tedious. The Cuttings grow freely, and will with due Care make handsome Plants.

Let it be managed thus. In the Beginning of *May*, fill as many Pots with this Compost as you desire to raise Plants. Set carefully in each of them one good Cutting from a thriving Shrub, and fixing the Earth well about it, give a gentle Watering.

Place these Pots in a Bark-bed, that has a very moderate Heat; shade them, and water them gently every Evening, till they have taken good Root. Then by Degrees inure them to the Air, by opening the Glasses.

In the Evening of a mild Day, take them out entirely; and set them among the hardy Exoticks in the open Air.

Here let them be watered occasionally, and in *October* let them be removed in the Greenhouse.

They must have Air as often as the Winter Days allow of opening the Glasses, and they will thus rise to their full Perfection, and will continue flowering the greatest Part of the Year.

Once a Year it will be proper to clear away the Surface of the Mould in the Pot; and supply it with fresh of the same Kind: and always in Winter, when the Plant is hous'd, the Care must be to give it as much Air as can be admitted; and very little Water.



C H A P. II.

The Management of the Flower-Garden, Greenhouse and Stove.

THE Eye of the Florist is now upon his Auriculas, from which he expects a full Blaze of Glory in the Spring: let him prepare

for it in Time: in Gardening, no great Advantage comes but at the Price of judicious Labour. They are at this Season to be prepared for flowering well by fresh

Jan. fresh Earthing; and that done, they are to be preserved from Frost, and defended against great Rains, during the Remainder of the severe Season; without choaking them for want of Air, which would draw them up weak, or keeping off all Wet, which would starve them.

The common Writers know the Necessity of this, but they give imperfect Directions for doing it: indeed, if we examine their Pots with a Florist's Eye, we shall see their Practice agrees no better with Reason or true Knowledge, than their Writings.

They order Hoops and an Awning of Mats to be drawn occasionally over the Beds: but for the Season now coming this will by no Means answer the Purpose: if the Plants be too much covered, they will draw up weak and be of little Value; and in whatever Manner it is done, the Change is too violent from this Closeness to the open Air.

In the former Months of Winter, when the Plants are in a State of Rest it may succeed, but now the Flower-head is form'd in their Centre, and is ready to push forward.

This unnatural Smothering, and violent Change from that to Openness, will be destructive of their Beauty.

We shall lay down a very different Method for the true Florist to observe; which, tho' new to the Publick, has been confirmed by many Years successful Practice.

This Method, the Publick owes to the ingenious Mr. THOMAS BARNES, of *Elsham*, in *Lincolnshire*; from whom we receive the Account, and to whose Correspondence we hope to be farther indebted in the Course of this Work.

Mr. BARNES's Method of managing Auricula Plants.

Chuse a Piece of Ground that lies high, and in a South, or from South-east to South-west Aspect. Strew over the Surface a good Quantity of Sand and Coal-Ashes, and having raked them to a due and equal Thickness, in the Middle of *January* dig them in.

Break the whole very well, and these Materials thus mixing with the Mould, will make it a dry light Soil.

Prepare a Reed-hedge of the common Make, six Feet high, and suited to the Extent of the Ground.

Cut a Piece of broad Mat of the Length of the Hedge, and fasten it to the Top along one Edge.

Cut a Number of Pegs, fit to keep down the other Edge of the Mat when let to the Ground; and having by the End of the present Week laid all these Things ready, the Work will be easy.

Take the Opportunity of the first mild Weather that comes after this for dressing the Plants, and let it be done with great Care, remembering that the Bud of the Flower is already form'd in

this Centre; and that if they be rudely disturbed, it will do more harm, than all the good that can come from the Dressing.

Break and turn up some one of our Heaps of Compost; that has for its Basis good Pasture Earth moderately enriched; and lay a Quantity of this ready for the Plants.

Then one by one take up the Pots. Pick off all decayed Leaves; and lightly stirring the Earth at the Surface, take it off as deep as you can, without hurting the Roots.

In the Place of this, put in some of the Compost, and carefully draw it up about the Plants. A great deal of Care must be taken that none of it gets among the Leaves; and then the higher it is drawn up about them the better.

One by one let all the Pots be managed in this Way; and when the whole are finished, let them be set in Rows in the Bed of Earth prepared for them as just directed, as close as the Pots can stand to one another.

They may be thus set the whole Length of the Ground, and to the Breadth of three Feet, for thus far they will be perfectly well protected from all Danger, by the Hedge placed as we are about to direct.

The Pots being in, and the Mould drawn up to their Rim, let the Hedge furnished with its Mat, be brought to the Place, and let it be fixed in the Ground to defend them: not upright, but sloping three Feet and a half, or a little more.

When it is placed in the right Direction, let it be secured by several Stakes; and to these it may be so fastened, that it will stand much more secure in the slanting Direction, than it would upright. We have named the Aspect that is proper, and the Gardener will understand it is to hang to the southward.

Thus let the Hedge stand in all common Weather with its Mat hanging back upon it, which serves as a double Defence, thickening the Hedge.

In severe Weather, every Evening let the Mat be drawn over and hang perpendicular as it falls; fasten the Edge to the Ground, with the Pegs prepared for that Purpose, and in this Manner let it remain all Night, and if the Weather be very hard, for the first Hours of the Morning.

Afterwards it must be thrown back upon the Hedge, the Bed left open, and this Management continued as long as the Weather is severe: At all other Times the Hedge alone is a sufficient Defence, and the Plants thus shoot at Leisure, open to the Sun and Air, and yet defended from violent Rains, Snows, and the cold northern Blasts.

While the Plants are thus defended from Cold and violent Rains, they must not be kept without Water.

In severe Frosts nothing must be done in this Matter; because 'tis Water that gives the Frost its worst Power over Plants: but if the Weather be mild and open when they are dressed, as soon as they are in the Bed, let them have a gentle Watering;

Jan. tering; and after this, at Times, when there is no Danger of Hurt from it, let the Watering be repeated, giving it carefully to each, three Hours after Sun-rise; and using a Pot with fine Holes, and Water from a shallow or well shelter'd Pond.

In this Way the Course of Nature will be kept on in the proper gradual Method: neither forc'd nor retarded. The Shoot for Bloom will rise as the Season calls it forward; and the Plants will shew the best Flowers of their several Kinds.

This Care being taken of the Auriculas, let the Gardener look carefully over his other Beds of Flowers. There are some we shall advise him yet to plant; and the others, according to their Degree of Growth, will require a various Management: for there is a great deal of Difference in Nature in the State of such Plants as have not yet shewn their first Shoot above Ground, and such as have.

We shall begin with what little we have to direct respecting Planting. It is a very advanced Season, and some will exclaim at the Thought of putting Tulip Roots, at such a Time, into the Ground: but let these recollect how much we have said of it, and how often inculcated the providing for a Succession.

We shall yet direct some Tulip-Roots to be set, which have been kept out of the Ground for that Purpose; because this late Planting will make late Flowering; and there will be Spring Flowers in such a Garden till the full Blow of Summer.

For these, let a high and dry Border be dug up, and let them be planted at the same Distance we have directed for those in Autumn, but half an Inch deeper. Let the Earth be drawn carefully over their Tops; and upon the Bed let there be strewn some Pease-straw, driving in here and there a Peg, to keep it in its Place: this will keep them from Danger by Frost; but there is yet another Article of Mischief, from which they require Defence: this is Rain: and against this the Pea-straw is little Protection.

The Roots thus planted in new dug Earth, kept soft by the strawy Covering, will not fail to shoot and thrive if they continue tolerably dry; but if a cold Rain drenches the Ground just after, they would rot in the Places where they should have grown. To prevent this, in all hard Showers let a Mat be drawn over the Bed; and this be

constantly repeated as often as the Danger happens, till they are up.

With Respect to the Difference of those several Beds which were planted in Autumn, we have nam'd the first Distinction, which is, that between such as are up, and such as do not yet appear above Ground.

The Defence of these latter is the easier; for there requires nothing but a Covering for the Surface of the Bed. It is the Fashion at present to use Tan for this Purpose; a Custom introduc'd from the Practice of those Gardeners, who using a great deal of it in Stoves and Hot-Beds, do not know what to do with the Refuse: but it is very wrong. Tan is too small; it covers too close, and heats upon the Bed, which was not intended.

I have found Pea-straw better than any thing for this Purpose; and my Custom has always been to throw a good Coat of it over the whole Ground, Beds and Alleys, treading it down in the Alleys, and taking Care that it lie even upon the Beds.

With Respect to those which are up, they must not be thus cover'd, but Mats should be drawn over the Hoops we have directed to be plac'd upon the Beds for that Purpose.

This is a very needful Practice; but in the improper Management of some Gardeners it has done more Harm than Good.

A great deal of Care is to be taken that the Plants are cover'd up no longer nor oftener than there is absolute Necessity; and there requires great Attention and Discretion for the hardning them afterwards to the Air.

Those which have not been shelter'd from the Colds of Winter, will bear very well the worst Blasts of Spring; but it is not so with such as have been us'd to this Defence: It is a Practice that when once begun, must be continu'd; otherwise these Plants will suffer when others are not in Danger.

In the Management of unskilful Gardeners, these Hoops and Mats have destroy'd more Plants than the Winter's Frost. They either choak them up till they lose the Principle of Life, and from the Warmth and Moisture of the Air grow mouldy; or they keep them so warm in Winter, that if they escape the first Danger, they perish by the natural Cold of Spring, to which they must of Necessity be expos'd, and which from their former nursing they cannot bear.

Jan.



S E C T. II.

The Business of the SEMINARY, for this Week.

LET the Gardener go over his Beds which are intended for planting in Spring, and give the Earth its last Turning. Let this be done with great Care. Let all Clods be broke; and let the Whole be thrown up in a new Ridge, to receive the Influence of the Air, till the Time of levelling it for Planting.

Let him, for the last Time, look over his Trees, with a View to Pruning. If any Branch hang amiss, that he did not observe before; if any be kill'd by the Frost, or broke down by the Winds, let him use his Knife to them with Boldness and Discretion; taking off the one below where it is broke, and the others to the Quick Part. It is but little that will require to be done in this Way now, if he have follow'd our former Directions heedfully; and it is the last Opportunity he will have for doing it.

Let the Ground be dug up between such as are well establish'd in their Growth; and let all Roots of Perennial Plants be carefully picked out.

Let him examine his young Trees, to see whether they be crop'd or bark'd: and if any such Mischief appear, let him look well to his Fences. It is a Time when the smaller Kind of Animals are in the greatest Distress for Food: and they will therefore be most apt to do Mischief.

For the same Reason, while he repairs his Fences to keep out these Kinds, let him daily bait his Traps about the Seed-Beds; the Devourers he is to fear there are too small to be kept out of the Ground; and no Way is left but to destroy them upon the Places.

We have every where recommended to the Gardener the raising his Flowers of the choicer Kinds from Seeds. It is by this Practice the *Dutch* and *French* so long excell'd us in that Article; and 'tis to the following of the same Method alone we must owe the equaling them for the future.

We have under our Directions for the Autumnal Weeks, described this at large; and shall only add here the common Caution of a Reserve, in Case of Accidents.

We have directed sowing Things of less Con-

sequence at different Times; and shall advise the careful Gardener now to repeat the sowing of some Flowers whose Seeds will grow at this Period. If the others sown in Autumn fail, these will yield a Supply that will be very favourable; and if those succeed, still there is nothing but Advantage in having a greater Number: and there generally is some Good attending these successive Growths.

Two Kinds we shall particularly direct him to sow this Week; these are the *Auricula* and *Polyanthous Primrose*: their Seeds, we know from Experience, will grow at this Season; and the Trouble, in the Way we are about to direct, is very little.

Let a Couple of Boxes be nail'd up, of rough Boards, five Inches deep, and a Yard long, and nearly as much in Breadth.

Fill these with some of the light and not over rich Composts; and strew upon the Surface of one some Seeds of *Auricula*, and on the other some *Polyanthus* Seed. Sift a Quarter of an Inch of the same Compost over them, and then prepare the Place for their Reception.

Chuse a high and dry Spot in the Nursery, and cover the Ground half a Foot deep with Coal-ashes. Set the Boxes upon this, and cover them lightly with Pea-straw.

Lay more Pea-straw all round them, and keep it in its Place with a few Bricks.

Thus the Boxes will be defended at the Sides, as well as covered at the Top; and in this Manner they may be left to Nature. The Mould will be mellow enough, and they will be shelter'd from the Rigour of the ensuing Season.

In Spring the Pea-straw may be remov'd, and there will be found many promising Plants. These must be taken into the same Care with the others, from that Time, and they will produce as good Plants.

The whole Management of the *Polyanthus* we have given under that Head in our Fourteenth Number; and shall, in the same Manner, treat of the *Auricula* when we mention it at the Time of its flowering.

Jan.

Jan.

XX

S E G T. III.

P O M O N A, or the FRUIT-GARDEN.

IF the Business of Pruning have been properly manag'd in Autumn, there will not be much Work for the Gardener now among his Fruit-Trees. But Omissions may have happen'd, or the Garden may now first come into the Possession of one who knows how to manage it better than those before.

We shall therefore, in few Words, lay down what may be done now in this great Article; and what must, if hitherto not done, be now omitted longer.

The Peach, Nectarine, Apricot, and Plum Kinds, if not prun'd in Autumn, must be now let to remain in all their Rudeness till Spring: for the Wood of these Trees does not bear Wounds at this Season.

All the Trees of the Kernel Kinds, Apple, Pear, and the like, may now be reduc'd to Order, according to the Rules we laid down in the preceding Doctrine of Pruning; and the small Shrubs of Gooseberry and Currant may be manag'd in the same Way without Danger.

We shall not load this Work with Repetitions; therefore refer, for the Method, to the preceding Directions.

But, on this Subject, it may not be amiss to add, with Respect to those Kinds which bear the Knife at this Time of the Year, that, beside the pruning those which have been neglected at a better Period, it will be proper to look over such which have been regularly manag'd before.

The Accidents we have mention'd as possible to happen in the Nursery Trees, may also take Place in these: some Branch may be decay'd since the Pruning; or the Wind may have broke one: in either of these Cases, the damag'd or decay'd Part is to be retrench'd, or cut out entirely, according to the Degree of the Mischief. And beside this, it is proper to look over the Trees, at this Distance from the Time of Pruning, to see whether what was then done appears now sufficient. A second Thought is in no Case more useful than in the Affairs of Gardening; and in nothing more than Pruning.

In Regard to the Stone Fruit nail'd to Walls, there are regular Directions to be follow'd, which we have given in their Place; but in these, where less is to be done, in the common Method, more is left to Fancy.

Let the Gardener remember what we have directed in the taking off decay'd or ill growing Branches from these Trees before; that the wounded Part were left secure from Wet lodging upon it: the Caution is yet more needful now; for the

Wet of Winter is worse than that of any other Time.

The Saw is convenient for taking off large Boughs, but the Wound it leaves is so rough, that in whatever Position, some Wet will be detain'd upon it, therefore a Chissel should always be us'd to smooth the Part afterwards, and the Stump left sloping downwards.

The cautious Gardener must have his whole Year's Business in his Mind at every Period; and he will then be prepar'd for every Thing in its proper Season.

It will be Time that he, this Week, think of the great Affair of Grafting; and if the Winter prove a mild one, it may be now proper for him to cut them from the early Kinds.

A great deal of Advantage is lost in this Article, for Want of the Operator's entertaining a due Sense of it in all its Parts. The Benefit that will rise from the cutting the Grafts at a right Time, demands the most strict Attention to find when that Time is. No settled Week can be allotted as the best, because, according to the Severity or Mildness of the Weather, the Trees will be forwarder or backwarder; and the great Art is, to take them off before the Buds are too much swell'd.

When a proper Day is fix'd upon for cutting these, let a Piece of Ground be dug up for them, under a warm Wall; and immediately as they are cut, lay them in the Ground carefully, and scatter over them a little Pea-straw.

Tho' this be the best Time, in such Seasons, for Cutting, it is not the Time for using them; and the Gardener's Care must be to keep them in Condition, till the due Season for their Use. This will occasion their being watch'd as carefully as the Beds of tender Plants; for if a severe Frost set in, they require all the same Shelter and Management. More Straw is to be thrown over the first, as the Frosts grow more severe; but we by no Means approve of the Method of covering them with Mats; for it cannot be more essential to defend them against Frost, than it is to let in some Air.

These being prepar'd and secur'd from Injuries, let the Gardener look to his other Trees, that may have been overlook'd in the Hurry of Pruning; and also to those which requiring that Operation but seldom, are sometimes left altogether unregarded.

Of this Number is the Mulberry Tree. Few require less Pruning, or will less frequently admit of it without Injury: but the Gardener, in general, extends this Omission to an absolute Neglect.

The

Jan. The Mulberry naturally spreads its Branches at a small Height; and this Disposition of the Tree should be indulg'd. It is convenient and agreeable to pull the Fruit without climbing; and there are other Advantages in this Method; for the Mulberries ripen more securely upon these low than on the higher Branches. Scarce any Fruit holds so lightly to the Bough as this; when it approaches toward Ripeness: to this is owing the great Havock Winds make on those which are most liable to their Fury. This covers the Ground with them as they grow fit for Use; but the low Boughs being shelter'd in some Measure by the Walls and other Growths, hold them better. It is the Course of Nature; and the wise Author of all Things ordain'd it for this Purpose, that the Branches of this Tree should naturally spread horizontally near the Ground.

Therefore in the training a young Tree, let not the Gardener force it out of this Growth: let the Boughs spread at six or seven Foot from the Earth; and in young Trees let the Care be, that they rise at such Distances, and spread in such Directions, that they do not croud together, nor cross nor interfere with one another.

Jan. In Trees of long standing the Rule of Cutting is the same; and the principal Business is to see that the Branches preserve that proper Growth and Freedom intended first to be given them. If any rub against one another, let one of them be taken off; for it is better to lose one than spoil both. When a large Bough has thus been taken away, a new one is to be encourag'd to supply its Place.

Let the Tree at the same Time be carefully look'd over, that there be no dead Wood or decay'd Branches left upon it. This is all the Cutting that is requir'd, and let the Gardener see he does no more.

The Boughs design'd to produce Bearers, must never be shortned, for they bear their Fruit upon the Branches of the same Year's Growth, proceeding from a few Buds near the Extremities of the last Year's Shoots. Therefore if the Ends of the Shoots, with the Buds, be taken off, no Fruit can follow there.

It is very essential to the Gardener to observe the Order of Nature in the bearing of different Trees; but it is not regarded sufficiently.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

LITTLE is to be done this Week in the Kitchen-Ground, more than the Continuance of that Care we have directed to be taken of such Crops as were in Danger from Frost or Wet: let this be repeated duly; and let the Gardener never one Day omit to walk the Rounds, in Order to see what wants Defence, and what does not.

Let him dig up a warm Border of good Mould in some well shelter'd Place, and sow upon it Lettuce-Seed of the common Kinds. Those which are hardy will rise and stand the Winter; and being kept clear of Weeds, they will come in at an agreeable Time.

Let him chuse another Spot for some Pease and Beans; and sow a small Crop of each, to come in after those we have already directed to be planted; or to supply their Place, if the Frost have destroy'd them. This is the Advantage of Crops

put into the Ground at short Intervals: and without this there is no being secure of supplying the Table at all Times with all that can be in Season, which is the great Praise of a good Gardener.

Let a Bed be prepar'd now also for Carrot-seed: to this Purpose, let a Piece of light Ground be chosen; and let it be dug two Spades Depth, and perfectly broken. Let the Seed be scattered thinly upon it, and rak'd in, and let a little loose Pea-straw be thrown over, to keep off the extreme Effects of the Frosts, which may naturally follow at this Time. It must not be thrown on so close as to block up the Ground; for a free Air is as needful to Vegetation as any thing can be; neither must the young Plants be rais'd so tender as to fall by the next Frosts after the Straw is remov'd. Only a slight Scattering of it best answers the Purpose.

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R XX.

For the Middle of JANUARY.

S E C T I O N I.

FLORA, or the PLEASURE-GARDEN.

C H A P. I.

Curious Plants and Flowers now in their Perfection.

i. H U R A.

Jan. **A** Tree of extreme Singularity: native of
Plate XX. *Mexico*, and other warm Parts of *Ame-*
Fig. 1. *rica*, and celebrated by all late Writers.
The Form of its Fruit has obtain'd it various
Names.

The Vulgar, from its Shape, which seems
as if elegantly wrought by Art, and from
the Use sometimes made of it to hold Sand for
Writing, call it the *Sand-Box Tree*: some the
Jamaica Walnut: not that it approaches in the
least to the Walnut Form; or is a Native of that
Island; tho' now common in the Gardens there,
from Seeds obtain'd from *Mexico*.

HERNANDEZ, from the violent Crack with
which the Fruit bursts to Pieces, when dry, calls
it *Arbor Crepitans*: others, *Warnelia*, and *Have-*
lia; but its most receiv'd and general Name is
Hura. This LINNÆUS adopts; and as there is
no other known Species, he adds no Epithet of
Distinction.

The Tree, even without its Fruit or Flowers,
is beautiful: for there is not a handsomer Leaf,
nor one that hangs more elegantly.

It grows to twenty Foot, or more, in Height,
with an upright and regular Trunk, spread to-
ward the Top into many Branches. The Bark
Numb. XX.

on the Trunk is tolerably smooth and brown; and
the young Shoots are green.

The Leaves grow in considerable Number to-
ward the Tops of these, and they are plac'd in a
drooping or hanging Posture upon long Footstalks.
They are of a beautiful strong green Colour, and
of a very handsome Shape; oblong, broad, in-
dented in a heart-like Manner at the Base for the
Insertion of the Stalk, and wav'd and sinuated at
the Edges. They decrease in Breadth from the
Base, and terminate in a Point. The middle
Rib, which is very conspicuous on the Back of
the Leaf, is of a whitish green. The whole
is full of a milky Juice, as is also the Foot-
stalk, and the tender Part of the young Shoot.
This flows plentifully on breaking them; and,
as it dries, becomes brownish.

The Flowers are of two Kinds, Male and Fe-
male, upon the same Plant.

The Male Flower is of an extremely simple
Structure: it has only the Rudiment of a Cup,
and has no Petals. The Filaments are numerous;
they rise from the Base of this little Cup, and are
united in their lower Part into a cylindric Body:
at their Tops they spread out in Form of numerous
Branches, one of which is plac'd an oblong Button.

N n n

The

Jan. The Female Flower has no Corolla, but is compos'd of a Cup, with the Rudiment of the Fruit and Parts of Impregnation.

The Cup is form'd of a single Piece, and is hollow, of a cylindric Figure, furrow'd on the Outside, and undivided at the Edge.

From the Rudiment of the Fruit contain'd within the Cup, rises a single and long Style, on which is plac'd a hollow Stigma, or Top, so large and conspicuous, that *TOURNEFORT* consider'd it as a Flower compos'd of one Petal. To this is owing his Description of a Funnel-shap'd Flower to the *Hura*, which is copy'd, with his other Mistakes, by the Author of the *Gardeners Dictionary*.

This great and hollow Top to the Style, is a singular Provision of Nature for the Impregnation of the Fruit; the Male Flowers being fewer in Number than in many other Trees in which they are distinct. Their Dust is scattered, and this hollow Top of the Style catches it. It is spread out into a broad Rim, and divided by twelve obtuse Segments.

The Male Flowers fallen, the Fruit swells under the Female; and, when ripen'd, is large, woody, and of a rounded but depress'd Form: wrought as it were with an Instrument, in twelve deep Furrows, which separate so many distinct Cells. These fly asunder with a violent Crack when the Air is hot, and they are thoroughly ripe; and each contains a single, compress'd, and somewhat rounded Seed.

The Student, initiated so far into the Science as we have brought him in the preceding Numbers, will know this Tree belongs to the *Monocious* Class, the Twenty-first in the *LINNÆAN* System, that Tribe comprehending all those Plants whose Male and Female Flowers are separate, but on the same Individual.

Under this Tribe the Marks which serve as Characters of the Class in others, can be us'd only as the Terms of a Sub-distinction. If there had been Female Parts in this Male Flower, and consequently no distinct Female Flowers, the Tree would have been one of the *Monadelphous* Kind, because the Filaments coalesce at their Bottoms into one common Body.

This Mark, tho' subordinate to the general Arrangement of the Plant, which is taken from a superior Mark, the separate Male and Female Flowers, yet places it in a particular Sub-division, the Ninth under this Class, the *Monoecia Monodelphia*.

The Fruit, which we have represented at large near the Branch of this Tree, in our Twentieth Plate, is prepar'd for a Sand-Box, by cutting it open where the Stalk is inserted, and taking out the Seeds: after this, being set on the Bottom, it holds Sand, and seems a wooden Utensil turn'd for this Purpose.

The Way to keep it from bursting, is to cover the Bottom with Sealing-Wax; but this is not secure.

I remember at the late Duke of *Richmond's* to have seen one fly to Pieces, in Spite of this Security, as it lay on a Mantle-Piece in the Dining-Parlour,

with a Crack like a Pistol, scattering the separated Parts about like Bullets.

This Fruit we were acquainted with in *Europe*, long before we knew any thing of the Tree which bears it.

CLUSIUS describ'd and figur'd it; and from him, all, till *HERNANDEZ*, copy'd what they wrote of it.

HERNANDEZ's Description of the Tree is imperfect, and his Figure faulty: he has agreed with *CLUSIUS* and others in attributing to the Fruit Virtues, which, upon better Authority, appear to be imaginary. They speak of the Effects of it by Vomit and Stool, and mention two Seeds as a common Dose: but Sir *HANS SLOANE*, whose Memory is too sacred to admit Dispute of his Veracity, says, he had himself eaten several of these Seeds, without the least Effect of either Kind.

Culture of the HURA.

It is to be rais'd from Seeds, which are easily obtain'd, and grow freely. 'Tis best to have them from the *Spanish West-Indies*, if an Opportunity should offer of obtaining them fresh from that Part of the World: if otherwise, they may be had in Plenty from *Jamaica* and *Barbadoes*, where the Tree is cultivated by many People, and they will succeed very well.

For the Reception of these, fill two or three Pots with any of the light rich Composts which we have directed to lie in Readyness for other Occasions.

In the Beginning of *March* sow half a dozen Seeds, at regular Distances, in each Pot, and cover them half an Inch with the Compost.

Give the Pots a very slight Sprinkling of Water, and set them up to the Rim in a Bark-Bed of moderate Heat.

Draw Mats over the Glasses in cold Nights.

Once in five Days sprinkle on the Earth in the Pots a very little Water; and in the Middle of every tolerable Day, raise the Glasses by a notch'd Stick, for about an Hour: in this Manner the Seeds will grow regularly. When the Plants are come up, the Glasses must be open'd more frequently, and kept up longer, observing the middle Conduct between starving them with Cold, and drawing them up too tender.

Let them be water'd once in three Days; and when they are, by this Conduct, rais'd to some Height, and a little harden'd, let as many of them be transplanted as it is intended to keep.

Fill so many Pots with the same Compost, and take up one Plant for each. Leave in each of the original Pots one good Plant which stands near the Middle; for these not having the Check of a Removal, will be better than the others.

The rest must be planted with great Care, and the Pots set up to the Rim in a Bark-Bed; and they must be there shaded and water'd till they have taken Root.

Here they must be nurs'd with the same Care we have directed, during Summer; and at the End of *September* they must be remov'd into the Bark-Stove, and kept in the warmest Part of it, watering them lightly in Winter; and in Summer giving

Jan. giving them Air when it can be safely admitted. They will thus make a great Progress and beau-

tiful Figure; and with due Management, in Respect of Air and Water, will flower.

Jan.

2. PINE-APPLE.

Plate XX. Fig. 2. Speaking of Things commonly known, we give them, at the Head of the Account, their common Name; tho' we afterwards inform the Student of the more proper.

No Plant is more regarded, or deserves it more than this. The Singularity of the Fruit would not fail to recommend it to the Curious, did not its delicious Taste absorb all other Merit; rendering it the Delight of our Tables; and therefore the first Article of Care among Exotic Plants.

We have not very long had Knowledge of it in Europe; and what we at first obtain'd concerning the Plant was very imperfect: this may be well conjectur'd from CASPAR BAUHINE's Name, which reduces it to the Rank of Thistle, he calls it *Carduus Brasiliensis foliis Aloes*: the Aloe-leav'd Brazilian Thistle.

Since our better Knowledge, it has been universally call'd *Ananas* and *Nanas*. A Name transcrib'd by COMMELINE, and others, from ACOSTA.

Our common English Name Pine-Apple, has been given it from some exterior Resemblance between the Fruit and the Cone of the Fir and Pine Kinds, call'd by the Vulgar Pine-Apples.

LINNÆUS entitles the Genus *Bromelia*; and adds, as the distinctive Character of this Species, *foliis spinosis fructibus connatis caulem cingentibus*: Prickly-leav'd *Bromelia*, with Fruit cluster'd together round the Stalk: And, in his latest Works, *Bromelia foliis ciliato spinosis mucronatis spica comosa*.

That this Author has connected other Species with the *Ananas* or Pine-Apple, under the General Name *Bromelia*, the Student will understand, by his adding so careful a distinctive Character; but let him beware that he does not take the Sugar-Loaf Pine-Apple, the prickly yellow of PLUMIER, and the naked shining green-leav'd Pine-Apple of DILLENIIUS, as these Species, tho' Writers enumerate them as such.

It seems PLUMIER has given Occasion of Error in some of the Plants call'd *Bromelia*: but these which we have here nam'd are only Varieties, the Offspring of Accident and Culture: nor are they the only Varieties we have from the same Source, or will there be any End of new ones.

All these however the judicious Botanist sees as they are; as accidental Changes from the Wildness of Nature, under the Hands of Culture; and he will understand the Plant to be one and the same in its original Species, tho' they be multiply'd to a Number equalling the Tulips and Carnations of our Florists.

The Plant is robust, and two Foot and a-half high.

The Root is thick, and sends out many scattered Fibres.

The Leaves are long and narrow, sharp-pointed, and of a pale green, with a Tinge of blueish. So much is certain; and we may add, that there stand naturally many weak Prickles at their Edges; but in this Respect the Plant varies from Culture, as much as in the Shape and Bigness of the Fruit.

In the Centre of the Cluster of Leaves rises the Stalk, round, thick, robust, and of a pale green; with two or three little Leaves upon it. On its Top is plac'd an oval pyramidal fleshy Substance, form'd of many cluster'd Tubercles, supporting the Flowers; and after them the Seeds.

This, at its first Appearance, is green, and, in one of the Varieties from Culture, continues so when ripe; at which Time, in some of these Varieties, it is oval, in others roundish, and in others pointed: in some the Flesh is white, in others yellow.

Whatever be its Colour and Form, the Species is originally the same: the Flowers and Seeds ripen upon it without Variation: and on its Summit stands a Crown of cluster'd Leaves. Nothing can exceed the Singularity of its Aspect; nothing its Fragrance, when ripe, except the Taste.

The Flowers appear singly; one on each Tubercle of the general Fruit: their Colour is a blueish purple, and the Buttons upon their Filaments are gold yellow. The Seeds are oblong, numerous, incumbent, and obtuse.

To know the Class to which the Plant belongs, one of these Flowers is to be examined. It will be found plac'd in a small Cup, which rests upon the Rudiment, and is of a three-corner'd Shape, and divided at the Top into three oval Segments.

The Body of the Flower is compos'd of three Petals, which are of an oblong Figure, lanceolated, and longer than the Segments of the Cup. These stand erect; and there is plac'd among them a Nectarium of three Parts, inserted a little above the Base of the Petals, with convergent Points.

In the Midst of this Flower stand six short Filaments; each crown'd with its Button, of an Arrow-headed Shape; and in the Midst of these a single Style.

As these Parts fade when they have perform'd their Office, the Seeds ripen, and the Body of the Fruit swells, and obtains, by Degrees, its full Maturity.

The young Botanist counting the Number of these Filaments in the Flower, will be at no Loss to understand the Class to which the Plant belongs. It is one of the *Hexandria*; and the single Style shews it also to be one of the *Monogynia*; the first Section under that Class.

Culture

Jan.

Culture of the PINE-APPLE.

The Superiority of this Fruit over all others, in Taste and Excellence, has made it the great Article of polite Gardening. We shall deliver its Culture not from the irregular Directions of others; who, while they affect to disclose, apparently wish to conceal the Art for their private Advantage; but from Experience.

It is a Native of *Surinam*, of the hottest Countries of *South America*, and of some inland Parts of *Africa*. There it perfumes the Air for Miles; and murders many of the Natives by Surfeits.

From these Places the Knowledge of the Plant came into *Europe*; and its Culture from the *Spanish West-Indies* to our hottest *American* Islands. The *Dutch* first rais'd it in this Part of the World; and the Art being once found out by them, soon spread itself into *France* and *England*. At present we raise them equal to those of the *Dutch*; and we shall endeavour here to lay the Method down familiarly.

The Varieties we have nam'd have been produc'd from Seeds; and those who will take the Pains to raise Plants in that Method will have many more: but the ready Way is from the Crowns and Suckers.

The oval-fruited Pine-Apple was first known in *England*, as it was the Kind originally rais'd in *Holland*; but the Sugar-Loaf Kind is preferable, for many Reasons; and is the Kind we shall recommend to all who are about to begin a Pinery.

The Fruit in this usually is larger, and the Juice of a finer Flavour: and there is the great Advantage of its producing Suckers from the Stalk, toward the Top, which in the oval are much less common.

From these Suckers, the Crowns, and those from the Sides of the Plant, the Pine-Apple is to be rais'd.

In order to the cultivating these, the first Requisites are two: a Bark-Bed covered with a Frame and Glasses; and a Stove with its Bark-Pit. The first serves to raise the Suckers and Crowns to a Condition of bearing Fruit; and the second is for bringing their Fruit to Perfection.

These are to be constructed in the following Manner:

Let the Frame over the Bark-Pit be built with Brick-work, and have Flues to warm the Air in Winter. Let its Length and Breadth be according to the Quantity of Plants intended to be rais'd, and the Bigness of the Stove to be supply'd from it: but let the Depth be so much, that the Glass Covering may be three Inches above the Height of the tallest Plants that need be kept in it; and the Whole built firm and sound.

Every Bricklayer knows now how to construct the Brick-work, and carry the Flues: we shall not instruct him in his Business, but refer him to some one that is already constructed, and succeeds well, if he be diffident: he will there receive certain Information, much better than can be convey'd by Figures: but to the Gardener we have a very essential Point to explain.

Let him order the Bed to be something larger

than the common Custom, in Proportion to the Quantity of the Plants; for however little he may be aware of it; or however little the present Practice seems sensible of it, the giving the Plants Room in their Infant-Bed, is the original Principle on which the Largeness of the Fruit depends.

The Stove should be built with Glasses, a Yard and half high in Front; and it should be two Yards high at the Back. From the Top behind, to the Top of the Front Glasses, should be carry'd a Covering of Glass, sloping: and within is to be the Tan-Bed.

The Brick-work is a material Article, and we refer the Operator for the Construction of this, and the Disposition of the Flues, to the Example of such as he finds succeed.

With Respect of the Bigness, it must be suited to the Quantity of Plants intended to be rais'd. A Tan-Pit of thirty Foot long, and seven broad, will conveniently hold a hundred: and the Glass and Brick-work must be contrived to surround and cover it.

The Stove and Frame being thus suited to one another, and in Readiness; the Compost for the Plant is next to be considered. There have been various Kinds employ'd, but the best is this:

Mix together one Load of rich light Mould, from under the Turf in a Pasture, half a Load of River-Mud, half a Load of rotted Dung from an old Melon-Bed, and two Bushels of fine Pit-Sand, with the same Quantity of old Cow-dung.

Let these be very well united by stirring; and then thrown up in a Ridge, to receive the Influences of the Air.

When the Brick-work is dry and harden'd, and the Mould and other Ingredients, in this Compost, are well blended, and enrich'd by frequent turning to the Air with a new Surface, all will be ready for beginning the Plantation.

This is to be made with the Crowns taken from the ripe Fruit, with the Suckers from Plants in our own Stoves, or from Plants brought from *America*.

The latter Method is uncertain, and there is a plain Objection against it, which there is no Security of having a good Kind.

The Sugar-loaf Sort whose Leaves are streaked on the Inside with Purple, or the Montserrat Kind, whose Leaves are entirely purple or brown within, are to be preferred to all others.

The Crowns of these, when cut in *England*, are always ready; and as soon as the Fruit is cut; Provision should be made for Suckers, by cutting the Leaves of the Plant, taking off the Earth from the Surface, putting in fresh from the Bed of Compost, and setting the Pot up to the Rim in a good Hot-Bed.

Here it is to be watered every Evening with Water that has stood in the Stove; and Vegetation being thus promoted, when the Stalk is cut away, the Effort of Nature will all be upon the making Shoots of Suckers, which will serve for the new Plantation.

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Jan. If the Plants be procured from *America*, let them be soaked in a strong Decoction of Wood Soot and Tobacco, to destroy the Insects, with which they commonly are loaded, and which will destroy them, and spread over every thing else in the Stove, if not killed at first in this Manner.

If the Plantation be made in the more usual Way from Crowns and Suckers of our own Produce, there requires a great deal of Care, tho' of another Kind.

Let the Crown be taken off from the Fruit very gently; and the Suckers drawn away with such Caution, as not to break the Membrane that naturally surrounds them.

Let the lower Leaves be taken off, and let both be laid upon a Shelf in a warm Room, till the Bottoms are dry and hardened: for if planted while wet, they will rot.

Let the Gardener take this practical Caution, that the Suckers if carefully drawn off, will be fit for planting much sooner than the Crowns.

In general, three, four, or five Days lying will do in Summer; but in Winter, they take ten Days, and will not dry well any where but in the Stove.

When the Bottoms are firm and fit for planting, let the Gardener put some of his Compost into as many small Pots as he has Crowns and Suckers.

Let him carefully plant one in each Pot; and pouring in more Compost, fix it well; and when all are thus planted, let them be set in the Bark-bed: observing that the Bark is of a moderate Degree of Heat, and setting the Pots in the Bark up to the Rim, and at a small Distance.

Here they are to be kept during the Summer, without any farther Heat, than that of the Bark: and in Winter, with the Help of a gentle Warmth. They must be watered gently every fourth Day in Summer, and every sixth in Winter.

In the *April* following they will be fit for putting into larger Pots, which must be done with great Care; shaking out the Plant with its Ball of Earth entire, and filling up with more of the Compost.

After this they are to be kept in the same Manner till the End of *July*, and then removed once more into larger Pots.

These should not be too large, for such crowd the Bed, and rather injure than help the Plants.

At each Time of shifting, the Bark-bed must be stirred up; and some fresh Bark added.

The Plants must then be set in again, and gently watered; and after this preserved in every Respect as at first.

When they shew their Fruit, the Gardener must observe to remove them no more out of their Pots; for this can never be done without giving them a Check, and if they receive any when they are set for Fruit, it will render that Fruit small and ill tasted.

No. 20.

Jan. The Plants should only be taken out of the Tan-bed to the Stove, when they are in a Condition of bearing: and in this Manner the Stove will always at the proper Fruit Season, which is from *June* to the Beginning of *October*, make a very glorious Figure, the Whole being fruiting Plants.

As the Fruit are cut, the Pots are to be removed and managed for the producing of Suckers, as already directed, in the Bark-bed; of which nothing need be done or seen in the Stove.

This is the best Way of managing the Plants; and notwithstanding the second Fire that is necessary in Winter for the Bark-bed, it is in the End the cheapest.

For those who chuse to do otherwise, the Bark-bed may be made in the common Way, without any Convenience for firing. In that Case, the Plants must be removed into the Stove at the Approach of Winter, and taken out again in Spring.

The Time of planting depends upon ripening of the Fruit, from which the Crown is taken, or from whose Root after cutting, the Suckers are raised; so that no Week or Month can be allotted, but they must be taken when ready.

In this short Compass is comprized the whole Management of the Pine Apple, from taking off the Crown, to its producing the succeeding Fruit: and to this we shall only add for the Sake of such as are less experienced in these Things, a few practical Cautions.

At the Times of planting and removing them into larger Pots, let there be always a few Stones put in the Pot over the Hole for the Discharge of Water, that it may always keep open: for if it should fill up, and the Wet be detained, it would certainly rot the Plant.

What the Gardeners understand by a three farthing Pot is the full Bigness for planting the Suckers and Crowns at first; and for many of them a halfpenny Pot will do.

The first Removal should be into penny Pots, or three-halfpenny Ones according to their Size; and the last into two penny Pots; these being the fittest Size for the fruiting Plants.

The two Dangers to which these Plants are exposed, while the due Degree of Heat is allowed them, is to be destroyed by Insects, or choaked for Want of Air.

The Insects are to be washed off with a Sponge, dipped in a Decoction of Wood-soot and Tobacco. And the other Accident is to be prevented, by raising the Glasses in the Middle of the Day with a notched Stick.

The Degree of Heat when Fires are employed is perfectly to be regulated by the Thermometers made for that Purpose, and mark'd with the Name of the Plant at the due Degree. It is impossible to keep the Heat always to this exact Line; but if the Gardener take Care never to let it rise above four or five Degrees higher, or fall four or five Degrees lower than that Mark, he will never hurt his Plants.

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3. GOLDEN ARCTOTIS.

Plate XX. Fig. 3. The wild Irregularity of Growth in this Plant is not its least Recommendation; but it has beside, Leaves of an agreeable Form and Colour, and Flowers far from inconspicuous.

The late Writers in this Science all knew it, but they have called it some by improper, and others by strange uncouth Names.

VAILLANT has named it an *Arctotheca*; BOERHAAVE and COMMELINE, an *Anemospermus*; and PETIVER a *Jacobaea*. LINNÆUS joining with BOERHAAVE and VAILLANT in separating it from all other Genera, names it *Arctotis*, as do VANROYEN, and the rest of the more modern Writers.

The Plant is variously branched, and disperfes its Ramifications and Leaves in a pleasing Wildness.

The Root is long, thick, and yellow, and is hung with many white Fibres.

The Stalk is round, thick, tender, and spungy. Its general Colour is a dusky green, but it has Spots of white, and toward the Insertions of the Branches, is often ting'd with purple.

The Leaves are large, oblong, and jagged, and sinuated with a ragged Freedom: their Colour is a deep and dusky green, but the middle Rib toward the Stalk is often red: at the Tops of all the Branches stand the Flowers one at the Extremity of each.

These are large, of a radiated Form, and they are pleasingly variegated in Colour; the Disk in the Centre is of a strong gold yellow, the Rays are of a paler yellow, but still with a golden Tinge, and very agreeable; and on the Outside they have some yellow, especially toward the Edges; but the general Colour is a beautiful deep Crimson: the Seeds are hairy, and stand after the Flower is fallen, in a kind of Button.

These HERMAN thought resembled the Heads of Seeds of the *Anemone*. He thence called the Plant *Anemone Affinis*, and those who followed him for the same Reason, *Anemospermus*.

The Propriety of a new Name will be very evident from this, and the Addition by which LINNÆUS has distinguished the Species as correct: he calls it *Arctotis foliis pinnato-sinuatis laciniis oblongis dentatis*. *Arctotis* with pinnato-sinuated Leaves and oblong dentated Segments.

The Flower when examined by the Eye of Science, does not want its Singularity.

The Cup in which it stands, is of a roundish Form, and imbricated Structure: the Scales of which it is composed, are of three Kinds, disposed in three distinct Assortments.

The lower Range are loose, and grow smaller to a Point at the Top, those of the upper Range are oblong, and have a rounded, hollow, shining End, and the middle Ranges are oval.

The Flower placed in this, like others of the radiated composite Kinds, is form'd of two Sorts of Floscules. In the Disk are numerous

tubular ones, and the Verge about twenty of the ligulated Kind.

In the tubular Floscules are placed five Filaments with oblong Buttons, uniting into a Cylinder, and terminated by five Dents; and among these a single Style. These tubular Floscules widen to the Top, where they are divided into five Segments which turn back.

The ligulated Flowers have a very short tubular Base, and their flat Body is long, and lightly nicked in three Parts at the Extremity.

In these there are no Filaments, but there stands very conspicuous a hairy Rudiment of a Seed. This is of an oval Form, but marked with four Ridges, and crowned with a leafy Cup, the Scales very small, but three of them which stand outward, are larger than the others, and incumbent; the others minute and distant.

From this Rudiment rises a single and very fine Style, crowned with two thick, upright Tops, or Stigmata, of an oblong and somewhat oval Form.

The tubular Floscules produce no Seeds, but after these ligulated Ones come single Seeds, which are round, hairy, and stand in a Cluster, crowned with the oval Leaves of the Cup.

They might well perceive this Plant differed from those of all the before named Genera, who first discovered it; and our Student will by this Description of the Parts, readily see to what Class it belongs in the LINNÆAN System.

The Coalescence of the Buttons on the Filaments, refers it to the syngenesious Tribe; and the Floscules in the Disk producing no Seeds, the various Impregnation from their Buttons in the ligulated Flowers of the Rim, shews it to be one of the *Polygamia necessaria*.

Culture of the GOLDEN ARCTOTIS.

The Plant may be raised from Seeds; but the best Method is by Cuttings. These take Root very freely, and soon grow into handsome Plants.

The Gardener is to observe, that he does not let them make any Shoots too low, for they will be troublesome to support; but for all the rest, he should suffer them to spread in their natural Wildness: and it will be best to raise Plants in this Manner very frequently, to supply the Place of the old ones, which are more subject to decay, and at best have less Beauty: the Leaves being fewer, and those as well as every other Part less lively.

In the latter End of May, let a Border of rich Mould be well dug and broke; and in this, let the Gardener plant as many handsome Cuttings as he desires to raise.

Let them be taken from thriving, healthy Plants, and set at eight Inches distance.

When they are in the Ground, let them have

Jan. gentle Watering; and let this be repeated every Evening.

In the Middle of the Day, let them be shaded by a Mat, or a sloping Reed-hedge; and let the Ground be kept clear from Weeds between them. By *Midsummer* they will be well rooted.

Let them be then carefully taken up, and planted in separate Pots of common Garden Mould.

Let these be placed in a shady Part of the

Nursery, till they are well rooted in the Pots, Jan. after which, let them be brought into the open Part of the Garden, where the hardy Exoticks are kept, and in the End of *October*, remove them into the Greenhouse.

Here they are to be treated as the other Plants, allowing them Plenty of Water at convenient Times; and as much Air as can safely be admitted into the Place. They will thus flower with great Profusion all the Year.

4. ALATED VERBESINA.

Plate XX. The Singularity of this Plant, and its beautiful Fig. 4. Manner of growing, claim a Place for it in every good Collection, tho' the Flowers are less conspicuous than in many other Kinds.

Most of the late Writers have described it but under various generical Names. *PLUKENET* calls it *Chrysanthemum bidens alatum*.—*MAGNOL*, *Cannabina Indica foliis integris*.

LINNÆUS who first properly established the Genera of the composite flowered Plants, refers this to the *Verbesina*. The Characters shew the Propriety and strict Justice of this; but the Plant so perfectly differs in its general Form and Aspect from all the other *Verbesinæ*, that one cannot wonder, others in general did not refer it to them.

LINNÆUS adds, as a Distinction of the Species, *foliis alternis decurrentibus undulatis obtusis*. *Verbesina* with undulated and obtuse Leaves, placed alternately, and running down the Stalk.

The Plant is small, rarely exceeding a Foot and a half in height, and more frequently much lower.

The Root is fibrous and white: the Stalk is round, upright, firm, divided into many rising Branches. Toward the Bottom it is of a fine purple, which dyes into a whitish green upwards.

The Leaves are very beautiful, their Colour is a fine strong green; their Shape oblong with a considerable Breadth; and they are waved along the Edges, and terminate in a blunt Point. They adhere to the Stalk by their proper Base, and thence are continued down upon it in a Kind of undulated Wings.

The Flowers terminate all the Branches; one general Head on each; this is of a globular Form, and of a fine Orange yellow.

The Flowers are placed in a hollow, scaly Cup, the Scales of which are oblong, hollow, and upright, and pointed. The Body of the Flower appears at first Sight, of the composite naked Kind, but it is truly radiated.

In the Centre are placed a great Number of tubular Floscules, divided into five Segments at the Edge, and in these are five Filaments with coalescent Buttons.

At the Edge are a single Row of ligulated Flos-

cules or Rays; these are so short, that they are confounded on a slight View with the others; but they are not tubular and quinque-dentated as those; but flat, and nicked in three Places at the Edge.

In these there is only the Rudiment of the Seed with its Style; in the others there are the same Rudiment and Style, as well as the Filaments.

The Seeds are thick and angulated; they stand in a Head, under the Defence of the common Cup; and, when perfect, have a chaffy Crown, with three Points.

The Student will see, by this Description, that the Plant is one of the *Syngenesia*; and when he has observed that the tubular as well as ligulated Floscules ripen their Seeds, he will find that the Division to which it belongs, is that of the *Polygamia Superflua*.

Culture of the ALATED VERBESINA.

The Plant is a Native of *Curasso*, *Surinam*, and other warm Parts of the World, and lives there most freely in a moist rich Soil. This indicates its Culture, which is very easy.

The first Plants seen of it in *Europe*, were rais'd from Seeds brought from that Part of the World. Seeds may still be obtain'd from thence, or the Plant may be rais'd from such as are ripen'd here.

In the Beginning of *March* fill a Pot with rich Garden-Mould: scatter the Seeds over this, and sift upon them a Quarter of an Inch of the same Mould. Set the Pot up to the Rim in a Bark-Bed of moderate Heat; and once in two Days gently sprinkle upon the Pots a little Water.

When the Plants rise, thin them where they are too close, allow them more Water and a little Air; and when they are four Inches high, transplant them into separate Pots.

Let these be fill'd with rich Meadow-Earth without any Mixture, and set them up to the Rim in the Bark-Bed again.

When they have been well water'd and shaded, and have fully recover'd the Shock of their Removal, admit more Air, and at length set them out among the Greenhouse Plants: after this they are to be treated as the rest, and will flower in great Perfection.

Jan.

Jan.

5. CANARY BROOM.

Plate XX. Fig. 5. This is a Shrub whose vast Profusion of Flowers, with their elegant Colour, recommend it strongly to the Curious. Many of the late Writers have nam'd it, but few under the proper Title.

PLUKENET and SEBA follow CLUSIUS and C. BAUHINE, in calling it a *Cytisus*; but the more accurate Generical Characters since establish'd, have taught VAN ROYEN and LINNÆUS to name it a *Genista*: they add, as its specific Distinction, *foliis ternatis*: Ternate-leav'd Broom.

Our Gardeners, who have been us'd to call it *Canary Cytisus*, will hence learn to speak of it under the Name of *Canary Broom*.

It is a Shrub of wild irregular Growth, and naturally full of Branches. Its common Height is five or six Feet, and it may be train'd up higher on Occasion: but the Beauty of its Growth is never so well seen as at about four Foot and a half.

The Root is woody, divided, and hung with many Fibres.

The Stem is round, not very robust, and covered with a brown Bark.

The young Branches are pale, and the whole Plant is thick covered with Leaves. These are small and hoary, and they stand three on a Foot-stalk. Their Colour is a greyish green.

The Flowers cover the Tops of all the Branches in long Series, after the Manner of loose Spikes, with intermingled Leaves. They are large, of the *papilionaceous* Form, and in Colour of a beautiful yellow. Sometimes this is very pale; sometimes it is deeper, and has a Tinge of Orange; and sometimes it is variegated with white. The Pods which follow these are flat and hairy.

The Cup which holds the Bottom of the Flower is small, form'd of a single Piece, hollow, and divided into two rude Lips. The upper one is split into two Parts, and the under one more lightly into three, which are all equal.

The Flower itself has four Petals, dispos'd in the *papilionaceous* Form. The Vexillum is oval, and pointed, plac'd remote from the Carina,

and thrown back entire. The Alæ are oblong, but shorter than the other Petals. The Carina is strait, very long, and nick'd at the End.

The Filaments are ten, and they unite at the Base; and the Style is single.

LINNÆUS places this Genus among the rest of the *papilionaceous* Kind, under the Class of *Diadelphia*; but the Filaments do not exactly answer the Character of that Class, or the Term which he has us'd to express it. This we had Occasion to observe also on a preceding Occasion.

Culture of the CANARY BROOM.

It is a Native of the *Canaries*, and of some of the warmer Parts of *Europe*, and thrives best in a light Soil that is not too rich.

It will grow very well from Layers; but the handsomest Shrubs are to be rais'd from Seed, and this requires little Trouble.

Let some well ripen'd Seeds be sav'd in Autumn; and the following Spring sown on a moderate Hot-Bed.

When they are come up let them be thin'd a little; and when, with careful Waterings, they have risen to three Inches in Height, let them be separately planted into Pots of fresh Pasture-Earth.

Let these be set up to the Rim in a Bark-Bed, where the Heat is but moderate, and carefully water'd; covering the Glasses with Mats against the full Power of the Sun.

By Degrees let them be harden'd; and toward the End of *July* bring them out into the open Air. In *October* remove them into the Greenhouse; and throughout the Winter let them have a good deal of Water, and as much Air as can be admitted.

When they have considerably increas'd in Size, they must be shifted into larger Pots; and being set out in Summer, and hous'd in Winter, they will be cover'd with Flowers most Part of the Year.

6. RIGID SHRUB SENEIO.

Plate XX. Fig. 6. This wants the gaudy Aspect of many of the Greenhouse Plants; but there is something in its robust Growth and sturdy Aspect that very well may demand a Place in our Collections.

Many of the late Authors have nam'd it; but in their Writings, as in the Mouths of our Gardeners, it is call'd by a wrong Generical Title: they make it a *Jacobaea*; so COMMELINE and RAY entitle it: but LINNÆUS, who has correctly establish'd the Distinctions among the Composite flower'd Plants, makes it a *Senecio*: he adds, as the Distinction of the Species, *corollis radiantibus*

foliis cordato oblongis amplexantibus scabris acuminatis serratis, caule fruticoso: Radiate-flower'd Shrub *Senecio*, with rough, ferrated, pointed, oblong Leaves, heart-shap'd at the Base, and surrounding the Stalk.

The Root is woody, and full of Fibres.

The Plant is seven Foot high.

The Stalk is ridg'd, and cover'd with a brown Bark; and has a greyish Hairyness.

The Leaves are oblong and irregularly indented. They surround the Stalk at the Base, and terminate in a Point, which is a little rounded. They are



1 Hura

2 Pine Apple

3 Golden Aretotis

4 Alated Verbesina

5 Canary Broom

6 Rigid Shrub Senecio

J. A. Hill delin. et sculp.

Jan. are of a fine bright green on the upper Side, but on the under they are whitish and hoary. Their Substance is firm, and the Middle Rib is whitish.

The Flowers are small, but their Number atones for their defective Size; they crowd the Tops of the Branches in vast Clusters, and their Colour is a fine gold yellow. The Seeds which follow these are of an oval Form, and have a long Down upon them.

The Cup in which this Flower stands, is form'd of numerous Scales. The Flower is compos'd of many tubular Floscules in the Disk, and flat ones on the Verge; and in these Floscules of the Disk are five Filaments, with the Buttons in a Cylinder. This shews the Plant to be one of the *Syngenesia*: and the Floscules of both Kinds producing ripe Seeds, it is of the *Polygamia Superflua* Kind.

Culture of this Senecio.

It is a Native of *Africa*, and thrives best in a rich Soil.

The Seeds ripen so well in *Europe*, that it is easily rais'd from them by the Assistance of a little artificial Heat, in Spring.

Let them be sown at the End of *February* in a Pot of rich Garden-Mould, and let that be set up to the Rim in a moderate Bark-Bed.

When the Plants are three Inches high, let them be remov'd into separate Pots, and these set again in the Bed. Let them be encourag'd by frequent Waterings, and by Degrees inur'd to bear the open Air: and in *July* let them be set out among the Exotics.

At the Approach of Winter they must be taken into the Green-house, and must there have frequent Waterings, and as much Air as can be safely admitted: they will thus flower profusely all Winter.



CHAPTER II.

The Care and Management of the Flower-Garden, Green-house, and Stove.

Nothing in the open Ground, will, at this Time, require more Care than the Carnation Plants. We have directed the Management of them in a particular Manner, in a preceding Number: but still, altho' they are thus generally secur'd from the Injuries of Frost, there requires a careful Attention to them according to the Season.

Nothing is more likely to injure them, at this Time, than cold Rains: If these be suffer'd to fall heavily upon them, they will give the Frost all that Power we have been so careful to prevent.

There is also a kind of cold Sleet that often falls heavily at this Season. This is a kind of Snow dissolv'd in Rain, and it does the same Mischief more suddenly and more effectually; freezing about their Roots as it falls, and penetrates. Against both these the Covering we directed to be in Readiness, must be drawn over the Plants.

This is the proper Defence against the Severity of the Seasons; but it must only be us'd when needed: for to choak the Plants for Want of Air, would destroy them as effectually as the worst Weather cou'd.

In this dead Time of the Year they are also expos'd, when uncover'd, to all Kinds of Devourers; for their juicy Leaves are not ill tasted; and the Scarcity of Provision will draw every Creature, that eats that kind of Food, to them.

I have always been accustomed to guard them,
N^o 20.

just as a Bed of Turnip or Radish-Seed, otherwise the Chaffinches, Sparrows, and other small Birds, feed on their inner Leaves, and utterly destroy them.

Traps must also be kept constantly baited for Mice, which otherwise will be as fatal to these, as to the Seed-Beds in the Nursery.

The Covering of Pea-straw we have directed to be laid upon the other choice Flower-Beds, must be taken off in mild Weather, and laid in a Heap, that it may be ready for throwing on again on the same Occasions: for if it be kept constantly on, the Plants will suffer from their Tenderness, when it is at once taken off in Spring.

In all these Things let the Gardener take Moderation for his Guide. He should defend his Flowers, not smother them: and the great Art is to know just how much will answer the Purpose of Defence; for all the rest is hurtful.

If there be much Rain, let some Straw be scattered over the Beds of new-planted Tulips, and such other Roots, to catch a Part of the Wet: and, if such Weather continue violent, Hoops must be plac'd over all of them, and Mats or Cloths drawn upon them. In the same Manner the Boxes of new-sown Seeds must be defended from heavy Rains, or they will rot in the Ground.

This Care being taken of the open Ground, let the Gardener look to his Green-house. If the
P p p Middle

Jan. Middle of the Days be mild, let him constantly use that Opportunity to give his Plants Air; for on this depends their Vigour.

On the contrary, if the Frost set in severe, let him keep all close; and if it continue hard, let him place Mats before all the Glasses; the Use of a Green-house is to defend the Plants from Frost; and if that be admitted, the very Intent of the Building is destroy'd.

In very hard Winters it is difficult to keep the House free from Frost; and it would be always proper, in the Construction of Greenhouses, for that Reason, to run a Flue along the Front, that in the worst Seasons it might be us'd to keep the Air warm, in Spite of the Rigour of the Weather. For want of this, in hard Winters, many Green-house Plants are lost; and of those which escape, a great Part lose their Leaves and young Shoots; and become deform'd as well as sickly.

In the Stove the same Kind of Care must be taken; but as the Plants there are tenderer, it must be in a greater Degree. The Heat must be kept up, or all is lost: but this is the least difficult Article; for nothing more is requir'd than to observe the Thermometer, and the Aspect of the Plants: either would answer the Purpose; but,

together, they are above the Reach of Error.

In the next Place, when any foul or dead Leaves are seen, let them be taken off, and carry'd out of the House, that the Contagion may not spread; and let such as require Water, have it regularly, tho' in small Quantities at a Time.

There is no Period of the Year at which the Pine-Apple Plants require a more strict Regard. Many of them will be set for Fruit, and shew the Rudiments of it at this Season: these will require a particular Attention. If the Heat be suffer'd to decline, they will receive a Check which they never can recover.

The great Art in the Management of this Plant is when the Fruit first shews itself. If any Check happens from that Time to the Ripening, it will be small and ill-tasted; but when it is kept constantly, from the first Appearance to the full Ripening, in a Condition of vigorous Growth, it will certainly be larger, and fine.

At this Time those Plants on which the Fruit makes its Appearance, must be also carefully water'd; for without this it cannot continue properly encreasing in Size. The Water must be allow'd, but in moderate Quantities; and always warm'd in the Stove.

S E C T. II.

The Business of the SEMINARY, for this Week.

Nothing is to be done the present Week, in this Quarter, more than the Continuation of what we directed for the last, the pruning and trimming up the young Trees of the hardy Kinds; defending their Roots, by covering the Ground with Haulm of Pease, or other such Matter; and seeing the Stakes are firm in the Ground which secure them.

Let a strict Watch be kept against Acci-

dents, as in the Flower-Garden.

Let Traps be set for Vermin about the Seed-Beds; and let the Gardener not only see that his Fences be secure, to keep out those larger Animals that would bark his Trees, but examine the Trees themselves, from Time to Time, to see that no Harm has happen'd to them in that Kind from unseen Causes. This Care is all: at present nothing farther need be done.

Jan.

Jan.

S E C T. III.

P O M O N A, or the FRUIT-GARDEN.

LET the Gardener's Employment for the present Week in this Part of the Ground be the Care of his Espaliers. Let him recollect these have a double Use, to bear Fruit, and to defend the Quarters within; and that their Merit consists in two Articles, that they be close without crowding, and flat without Formality.

On this short Lesson depends all the Doctrine of *Espaliers*.

His Care must be to keep them in the proper Condition which these Articles require, if they have been well made; and if not, he may every Winter mend their original Fault, by bringing them nearer and nearer to the right Form.

For the Service of the present Week, in this Article let him provide some small Ash-poles, such as are sold in half hundred Bundles, and a few of the larger Kind for Stakes. Some Osier Twigs well twisted, with a Parcel of Wire and some Nails.

Thus provided, let him consider the general Form of the Hedge, that he may begin to amend it, if faulty. The great Rule is this, the broader the Walk between, the higher may be the Hedge: the narrower that is, the lower the other must be.

Therefore if the Hedge be too high, the Consequence of which is, that the Walk will be damp, and the Fruit will never be well tasted, let him in all his Work reduce it lower. And on the other Hand, if it be so low, that it will bear more Height, let that by all Means be encouraged, for it will the better decorate the Walk, and hide the Quarters.

This first settled, let him examine the Stakes by shaking them; and where they rock, let him at once unfasten the Poles that are connected to them, and taking them up, drive some of his firm and large Ash-Poles in their Place.

On this depends the great Excellence of an Espalier, which is its Firmness.

This Kind of Hedge should stand like a Wall. No Sight is more displeasing than to see it sway with the Wind; nor do the Trees ever thrive that are subjected to this Motion.

All the loose Stakes being replaced, let him fasten up the Poles he had loosened from the others, and then examine how those and the rest continue.

Wherever a Pole is decayed, let him take it away, as the Stake; and lay one of the small Ash-poles in the Place of it.

Let him fasten these by strong Nails, to the upright Stakes, and then fix the Boughs to them.

When those which were decay'd are thus removed, let him look to such as are loose. Let these be fastened in the same Manner, as the new ones, by nailing to the firm Stakes; and securing the fastening in other Places with some of the Wire.

This finishes the Frame-work, and let him now look to the Trees and their Branches.

These must be regularly train'd along the Frame, and fastened at due Distances by the Osier-twigs, not tying them so close, so as to press or injure them.

Let him take Care that the Branches do not cross one another, and that they are not laid in too thick.

When he has secured the Hedge in every Part, and ty'd these in, let him look over his Work, and see that the Branches are placed at a tolerably regular Distance, and all is then as it should be.

In those Espaliers formed of regular, square, Timber, the Method is the same, only instead of the two Kinds of Ash-poles, there must be provided Timbers of the two Sizes.

S E C T.

Jan.

Jan.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

THIS Week it will be proper to lay in a farther Crop of Endive for blanchings; and as the Season is unfavourable, tho' the Work necessary, let the Gardener take these Precautions.

Let him take up a Parcel of Endive Plants from their common Bed; chusing such as have the most and best curl'd Leaves.

Let him draw some Cords across an airy, cool Room, and tye up these Plants as they are taken out of the Ground, with the Roots upward.

This is best done with some Bafs; and the Trouble is little: the saving of the Plants, amply recompenses it; for the Wet draining from their Leaves, in that Manner, they are exempted from the common Accident of rotting in the Ground, before they begin to blanch.

Open a Trench in a dry Part of the Kitchen Ground to the South, and lay in the Endive Plants after they have hung all Night in the South-side of the Ridge.

Bury them within half an Inch of the Tops; and when the Work is finished, see there be such a Slope that the Water will run off.

Thus they will blanch regularly, and will obtain not only a fine Colour, but a good Flavour.

This Week let the Gardener repeat his Care

of searching for Snails in Holes, and for Caterpillars Nests upon the Trees. The Nakedness of the Place, will make it easy for him to find them; and he will thus secure his Spring-Crops.

In the Beginning of Winter we directed the Gardener to plant out some of his early Kinds of Cabbage; and it will be proper now to watch the Opportunity of a mild and moist Day, to make a second Plantation of that Kind.

These should be planted in a dry and rich Soil; and they will succeed the others for the Table.

One common Error we are here to caution the Gardener to avoid, which is the sowing the Ground with another Crop wherupon these Cabbages are to be planted.

This is a common Practice about *London*, where Land is very dear, and the People who raise these Things must make the most of every Inch of it: and from their Practice it is transcribed into the Books upon this Subject.

The usual Crop is Spinnach, and they sow it before they plant the Cabbages; but in this Case both are the worse for it; and there is no Reason why the Country Gentleman, who has Ground enough, should impair two Crops, by dividing the Nourishment, which is only sufficient for bringing one of them to Perfection.

EDEN:

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R X X I .

For the Latter End of *JANUARY*.

S E C T I O N I .

F L O R A, or the P L E A S U R E - G A R D E N .

C H A P . I .

Curious Plants and Flowers now in their Perfection.

I. R A D I A T E D A N N U A L S E N E C I O .

Jan.
Plate
XXI.
Fig. 1.

THE Wildness of Nature is in few Plants seen more gracefully than this. The Stalk spreads, without the least Regularity, into innumerable Branches; and these are all crown'd with great Numbers of shewy Flowers; not double, as Culture gives many Kinds, but as we see the Hedge-Weeds rise from Nature's sowing, luxuriant in Simplicity.

The long Rays of the Flower, have, in the Minds of those who judg'd less accurately, remov'd the Plant out of its proper Place. These, from the Resemblance of it to the *Asters*, call'd it by that Generical Name. *Aster Africanus annuus Senicionis foliis*, is its Title in COMME-LINE.

LINNÆUS reduces it to the *Senecios*; and its proper Denomination is *Senecio corollis radiantibus foliis laciniatis, annua*.

The Root is fibrous, white, and of a bitter Taste.

The Stalk is weak, irregularly upright, diffus'd into innumerable Branches; in Colour, Crimson, dusted with white; and hung about with a white woolly Down.

The Leaves stand as irregularly as the Branches; but they are numerous and of a handsome Figure. They are long, moderately broad, and very deep-
Numb. XXI.

ly and irregularly divided into numerous jagged Segments. Their Colour is a fine strong and lively green; and the Middle Rib, which is very large on the under Part, is red, like the Stalk, and dusted over with the same greyish Powder.

The Flowers terminate the Divisions of the Branches, which are innumerable. They are large and beautiful: the Rays are of a fine deep Crimson, and the Disk or Central Button yellow.

The Structure of the entire Flower is this: A Conic Cup, form'd of a Number of narrow, oblong, and pointed Scales, furrounded at the Base with a few short and broad ones, contains a Cluster of tubular Floscules, arrang'd into a rounded Disk; and a few broad, oblong, and elegant Rays furrounding them.

The Floscules in the Disk have each five Filaments, with coalescent Buttons. There is also in the Centre of each an oval Rudiment of a Seed, and a single Style split at the Top. These therefore are Hermaphrodite Flowers: those in the Verge are Female only; but both ripen Seeds, which are wing'd with Down.

The Coalescence of the Buttons shews the Plant one of the *Syngenesia*; and as the Central Flowers can ripen their own Seeds, the Impregnation of

Jan.

Jan. the Female Floscules in the Verge not being necessary to the Continuation of the Species, the Subdivision to which it belongs is that of *Polygamia Superflua*.

Culture of this SENECIO.

The Plant is a Native of *Africa*, where it thrives best on the Sides of Hills, near Springs, and in the Neighbourhood of Forests. A rich Mould and due Moisture, with some Advantage of Shade, are therefore the true Means of raising it to Perfection.

The Seeds which ripen here grow freely; and there is no Occasion for farther Thought about its Propagation.

Tho' a Native of *Africa*, it will live without a Stove; but the Shelter of a Green-house at Autumn is very proper to keep it in Flower.

I have, in favourable Summers, made it thrive for a very long Continuance in the open Ground; but at the best it will be destroy'd in such Situations, before the Time of its coming to the most valuable Period of flowering, which is to this Season, thro' the dead of Winter.

Let ripe Seeds be gather'd in Autumn; for they are better than such as are produc'd in other Seasons. Let these be laid in the Heads upon a paper'd Shelf, and early in Spring shook out.

Let them be sown upon a moderate Hot-Bed

with those of the tender Annuals, and let the Plants be treated in the same common Manner.

When they are of a Height to transplant, let them be remov'd into a second Hot-Bed; after this into separate Pots; and in these let them be shelter'd under a Hot-Bed Frame.

From Time to Time let them be water'd; and let them have as much Air as the Season will permit, hardening them by Degrees to the taking of them out.

In *June* let the Pots be set among the Exotics in the open Air; and let two or three of the Plants be set in the open Ground.

Chuse for this Purpose, a Spot where the Earth has some Moisture, and where there is at Noon the Shade of Trees. Let the Plants be loosen'd from the Pots, with the whole Ball of Earth about them, and set in with Care.

The Management of these, and of such as are potted, must be the same. No Compost is necessary for either: common Garden-Mould agrees perfectly well with them. They must be suffer'd to spread out into Branches in their own wild Way; and from Time to Time carefully water'd.

Those in the Borders will be the largest Plants; but there will be a greater Number of Flowers on such as are potted. Those in the open Ground will be destroy'd early by the Frosts of the latter Part of Autumn; but such as are in Pots being remov'd with the other Plants into the Greenhouse in Winter, will flower till Spring.

2. C R I M S O N C R A S S U L A.

Plate XXI. We here bring before the Curious Reader a Plant worthy all his Attention.

Fig. 2. Singularity and Beauty are the two Sources of Recommendation in Collections of Exotic Plants; and Nature has distinguish'd some by one, and recommended others by the other.

This Plant possesses both; each in so high a Degree, that it wou'd be recommended sufficiently by that alone; and either so equally, that 'tis not easy to say for which it should be most regarded.

A vast and regular Tuft of Flowers crowns the singularly leafy and beautiful Stalks, and appears as an artificial Nofegay. Every one who has met with the Plant, has been surpriz'd and pleas'd with it; but it was not early refer'd to the proper Genus, or call'd by its distinctive Name.

COMMELINE makes it a *Cotyledon*; and from him BREYNIUS, and others, have recorded it under the same Title.

LINNÆUS, much more correct, has determin'd it a *Crassula*; and adds, as the Distinction of the Species, *foliis planis, cartilagineo-ciliatis basi connato vaginantibus*: *Crassula*, with flat cartilaginously ciliated Leaves, join'd at the Base, and furrounding the Stalk.

It is robust and shrubby.

The Root is thick and spreading: the Stem, where naked, is of a dusky brown, firm, and hard.

The Leaves are very singular and very beautiful: they are oblong, broad, and sharp-pointed. Their Substance is firm, their Colour a yellowish green, and they are edg'd with a filmy Rim. At the Base they grow together, and encompass the Stalk.

The Flowers are extremely beautiful and numerous, and they stand in great Tufts, in the Manner of Umbells. They are large enough to be very conspicuous; and their Colour is a bright and glowing Crimson.

Each has its separate Cup, compos'd of five oblong narrow, pointed Leaves, which converge, and form a kind of Tube.

The Body of the Flower is form'd of five Petals. These have very long and slender Bottoms, which coalesce at the Extremity; and the broad Part of each Petal is of an oblong oval Form and pointed, fully spread out; and naturally, when at the Extent, turning a little backward.

Deep in the Centre of the Flower is plac'd the Rudiment of a five-parted Fruit; and at its Base a singular and elegant tho' small Nectarium.

This

Jan.

This consists of Scales, equal in Number to the Petals : one rising from the Base of each Division of the Rudiment. They are nip'd at the End.

The Student who pursues by the true Path the Road of Science, when he has observ'd these, which he will understand to be a proper Part of the Generical Character, will look among the Filaments for the Classical Mark. These he will find in Number five; short, upright, annex to the Base of the narrow Bottoms of the Petals, and terminated, each by its simple Button.

Five Styles rise in the Midst, one from each Part of the Rudiment; and the Fruit which succeeds, is compos'd of five Capsules.

The five Filaments in this Flower shew the Plant to be one of the *Pentandria*; and the five Styles determine in the same Manner that it is one of the *Pentagynia*, the fifth Sub-division of that Class.

Culture of this CRASSULA.

It is a Native of the *Cape of Good Hope*, and of other Parts of *Africa*, but will bear the open Air with us in Summer Months, and live thro' the worst Winters in the Shelter of a Greenhouse.

The best Methods of propagating it is by Seeds; and the fittest Compost is one Part Pasture-Ground, and one fourth rotted Cow-dung.

Early in Spring let a Pot be fill'd with this, and scatter over the Surface a Dozen of the Seeds.

Sift upon these a Quarter of an Inch of the same Compost, and sprinkle it with a very little Water.

Set this Pot up to the Rim in a Bark-Bed of moderate Heat, and once in two Days give it again a very slight Sprinkling of Water.

The Plants will thus appear: they must be every Evening very gently water'd; and in the Middle of the Day some Air must be admitted.

When they have thus been nurs'd up to some little Height, let as many small Pots as there are good Plants, except one, be fill'd with the same Compost. Let the several young Plants be taken up with Care, only leaving the one which stands nearest the Middle, and which must be left alone in the original Pot. Plant the rest with great Care, and set the Pots in the Bark-Bed up to their Rim. Give them a very gentle Watering; and cover the Glasses with a Mat during the Heat of the Day.

Let them be thus manag'd till they are well rooted; then by Degrees harden them to the Air.

After this they will only require to be shifted into larger Pots, as they grow too big for the first; and to be by Degrees inur'd so far to the Air, as to bear it in the most favourable Seasons. They must then be set out for the Summer among the Exotics which bear that Exposure; and at the Approach of Winter remov'd into the Greenhouse. They will here bloom from *July* to the very End of Winter, if rightly manag'd; suffering no Flower to stand to Seed; and at Times repeating gentle Waterings.

Jan.

3. R O U N D - L E A V ' D C Y C L A M E N.

Plate
XXI.
Fig. 3.

This is a common Ornament of our Gardens; and added to the pleasing Colour of its Leaves, and Beauty of its Flowers, it has no small Recommendation from the Season in which they are produc'd: this is a Time when few can be had to grace the open Ground; and those few therefore have a double Value.

A Plant so conspicuous, and native of many Parts of *Europe*, as well as universal in Gardens, could not easily escape the Notice of any who have study'd Botany. It stands under the same general Name, *Cyclamen*, in all of them; but we meet with various Additions to this generical and universal Term, according to the Changes the Plant receives from Accident or Culture.

The most proper Addition to the Name in the old Writers, is that of CASPAR BAUHINE; *Orbiculato folio, inferne purpurascens: Cyclamen*, with a rounded Leaf, Purple underneath.

LINNÆUS, who suspects the Form of the Leaf to be capable of great Variation, and therefore too uncertain for a distinctive Character, adds, *corolla retroflexa: Cyclamen*, with a retroflex Flower; uniting the fancy'd Species of others under that common Name as only Varieties.

The Root is large and tuberous.

There is no common Stalk for Leaves and Flowers, as in the Generality of Plants; but each Leaf and each Flower rises directly from the Root upon its proper Footstalk.

Those of the Leaves are purplish, long, weak, and slender.

The Leaf itself approaches to round; but it is deeply divided for the Reception of the Stalk, which adheres in the common Way to an indented Edge, not as in some round Leaves, to the Centre.

Beside this Indenting, which, tho' it opens little, takes from the regular Roundness of the Leaf, it is terminated at the opposite Part by a small Point.

The Colour is, on the upper Side, a fine deep green blotch'd with white; and on the under Side a deep red, between Purple and Crimson. The Veins are large and conspicuous; and they are throughout of a pale Crimson.

The Footstalks of the Flowers exceed those of the Leaves in Length, and are usually more erect. They are as slender as the others; and their Colour, which is red at the Bottom, becomes toward

Jan. ward the Top pale and whitish. The Flowers stand singly, one on each of these Stalks; and their Colour is a deep purplish red.

Each has its Cup, which is rounded, and divided at the Edge into five oval Segments.

The Body of the Flower consists of a single Petal, but is of a very peculiar Form. At the Bottom it is rounded, and droops: the Part from this rises and is divided into five large Segments; and there is a prominent Neck. This falling, there comes a large round Seed-vessel of the Berry Kind, covered with a Shell, and bursting, when ripe, by five Parts at the Top.

To understand the Place of this Plant in the LINNÆAN System, the Student must tear open the tubular Part of the Flower: he will find within that five Filaments, short, and terminated by convergent Buttons; and in the Midst of these a single Style. This shews the Plant to be one of the *Pentandria Monogynia*.

Culture of this CYCLAMEN.

A very little Trouble and Attention will serve to stock a Garden with this humble Plant; but there will require that Patience which should be as much the Characteristic of the Gardener as of the Angler; for it will be some Years before the Seedlings rise to flower.

Let him gather ripe Seeds from an old and well-established Root of a good Kind, for the Varieties are many.

The Beginning of *June* is the best Season for collecting them; and he will at that Time find the Seed-vessel close to the Ground upon a twisted Stalk. This was the original Footstalk of the Flower; and it thus runs up into a spiral Form, by the great Contrivance of Nature, to draw the ripening Seed-vessel close to the Earth, where the Leaves may shelter it.

When they have perform'd this useful Office, they fade, and nothing appears till many Months after, when the Flowers rise upon their naked

Footstalks; and soon after them the Leaves, mixing among the later Part of the Bloom. Jan.

When the Gardener has taken up some of the Seed-vessels, at this advanced Season, let him lay them at a Distance from one another, upon a paper'd Shelf, to dry. They will burst, after a few Days, and the Seeds will fall out. Let him shake out such as do not fall naturally; and having separated them, let him spread them thin upon the same Shelf, to harden now they are naked.

In the latter End of *August* prepare a Border for them in this Manner:

Dig out the Mould two Foot deep, and throw in a Parcel of large Gravel to cover the Bottom two or three Inches. Then put in the Mould again; level the Surface, and scatter over it the Seeds, so that they may lie at about an Inch Distance. Sift over them a Quarter of an Inch of the same Mould, and throw on some Pieces of Furze Bushes.

If the succeeding Time be dry, let this Bed have now and then a little Water. After this the Plants will rise and thrive without any farther Care than that of keeping them clear from Weeds. They should be thin'd where they rise too close; and such as are taken up for this Purpose, should be planted in more vacant Spots.

They must remain in the Bed till they are come to the Time of their flowering, which will not be till about the fourth Year.

Then the best are to be mark'd, for there will rise many Varieties: and when the Leaves which succeed their Flowers, are faded, that is, toward the latter End of the *June* following, they must be taken up, and planted out in different Parts of the Garden, leaving as many as can conveniently stand in the original Bed. Their Distance in this should be about two Foot; for they will grow in a Number of Years to more than one Foot in Diameter in the Root.

After this they require no particular Care. They bear all Seasons with us, and flower in more Profusion every succeeding Year, as the Roots encrease in Bigness.

4. EVERGREEN MELIA.

Plate XXI. Fig. 4. The Singularity and Beauty of this Tree brought it early into the familiar Knowledge of the Studios in Botany; and we find it nam'd by them with great Praise, under the Title of *Azedarach*.

TOURNEFORT has distinguish'd it by an Addition of great Praise, *Azedarach semper virens, & florens: Azedarach* ever-green and ever-flowering.

LINNÆUS, banishing the harsh and barbarous Name by which it had been so universally call'd for some Time, has given it that of *Melia*; and, as the Leaves on this are branched, and there is another Species which has them simply pinnated; he adds, as the Distinction of this

foliis bipinnatis: Melia with doubly pinnated Leaves.

This is a Character not seen in those Leaves which accompany the Flowers at the Extremity of the Branches, but on those which are plac'd lower.

It is a Tree of considerable Bigness. The Root spreads far; the Trunk rises upright and thick; and at some Height spreads into many Branches. The Bark is brown; but on the young Twigs green.

The Leaves are very numerous and large: they are plac'd in an irregularly pinnated Manner; some on simple and some on divided Ribs; and each Pinna, or particular Leaf, is oblong, moderately



Radiated annual Senecio



Crimson Crassula



Evergreen Melia



Round leaved Cyclamen



Warted Coral Aloe



Orchide Hyacinth

Jan.

derately broad, sharp-pointed, and serrated. Their Colour is a very bright green on the upper Side, but on the under paler.

The Flowers crown the Extremities of the Branches in large Clusters.

They are separately small, and they are plac'd on long and slender Footstalks. Their Colour is a faint Purple, paler toward the Edges, and somewhat deeper in the Middle.

The Fruit which follows is of a rounded Form, and soft on the Outside; it contains a Stone also of a roundish Shape, but furrow'd in five Places, and divided within into as many Cells; in each of which is contain'd an oblong Seed.

The Flower has something in its Construction so extremely singular, that it very well deserves the most curious Inspection. The Cup in which it stands is small, form'd of a single Piece, and is divided at the Edge into five little upright Segments.

The Body of the Flower is compos'd of five Petals, but one is frequently abortive: these are oblong, narrow, and wide expanded; and in their Midst rises a Nectarium of a peculiar Shape: it is long, upright, tubular, and form'd of a single Piece, divided by ten slight Indentings at the Edge.

Within this singular Appendage stand the Filaments; they are in Number ten, corresponding to its ten Indentings. They are extremely short; they have their Infertion on the Inside of the Nectarium, but a little below its indented Rim; and they are crown'd with small Antheræ or Buttons, whose Heads scarce rise above it. The Rudiment of the Fruit is lodg'd at the Bottom; and its Style, which is single, rises to the Height of the Filaments.

The Student will not be at a Loss from this to find the Class to which the *Melia* belongs in the LINNÆAN System, or the Sub-division under which it is arrang'd. It is one of the *Decandria Monogynia*.

Culture of the MELIA.

The Tree is a Native of *Ceylon*, and many other Parts of the *East*, where it lives in barren Ground, and cloaths the naked Rocks with its profuse Ver-
dure at all Seasons.

Notwithstanding the Warmth of its native Climate, the Tree will stand our Winters in the open

Air, when it has arriv'd at a moderate Strength: but Care is requir'd to bring it to this Stature, and a proper Soil and Exposure must be allotted for it when planted out, or our Frosts will kill it.

Nature directs what we are to do with Respect to these Articles. The Place where it is planted out, must be warm and dry, open to the Sun, and shelter'd from cold Winds; and the Soil must be a dry and not over rich Pasture Earth.

This is the Ground to receive it when of six Years Growth; but to bring it to this Strength more Caution is required.

The Fruit is to be gather'd when perfectly ripe; and the Stones having lain some Time to dry, the Kernels are to be taken out of them: these must be left four Days upon a paper'd Shelf, and then sown in the following Manner:

Fill two Pots with fresh Pasture-Mould, and strew over the Surface of each half a dozen of these Kernels, and as many of the whole Stones; sift a Quarter of an Inch of the Earth over them, set the Pots up to the Rim in a Bark-Bed, and give them a little Water: one or other of the two Kinds will certainly succeed.

When the Plants come up, they must be water'd at Times, and by Degrees harden'd to the Air, by raising the Glasses.

Let them be nurs'd up in this Manner till the Heat of Summer, and then remov'd carefully into the open Air among the Greenhouse Plants.

At Autumn let them be remov'd with the rest into the House: and the succeeding Spring let them be carefully taken up, and planted into separate Pots, setting these up to the Rim in a Bark-Bed, till they have again taken Root.

After this they must be by Degrees inur'd again to the Air, and set out with the other Greenhouse Plants.

From this Time they require the common Management of the other Green-house Plants, till they are of such an Age as we have nam'd for planting in the open Ground: this must be done in *April*, with great Care; shaking them out of the Pot with the Ball of Earth entire; and planting them in a Hole where the Mould is well broke.

They must be water'd carefully till well fix'd in their new Place, and they will then require no farther Care.

Jan.

Jan.

Jan.

5. WARTED CORAL ALOE.

Plate XXI. Fig. 5. The everlasting Variety of the Aloe Kinds has sufficient Attention among our Collections; and there are few Species which more deserve it than the present.

Many of the later Writers have nam'd this; and some have rashly made two or three imaginary Species from its various Aspect, when more or less vigorous, or under a better or worse Management.

COMMELINE, who with great Diligence examined the Aloe Kind, calls it *Aloe Africana flore rubro, folio triangulari & verrucis ab utraque parte albicantibus notato*.

LINNÆUS, *Aloe foliis linguiformibus patulis distichis*: Aloe, with Tongue-like Leaves, that spread in two Series. A very expressive Name.

The Root is thick and pale.

The Leaves rise from this in a Cluster, and split, as it were, into two Arrangements: they are so very singular and beautiful, that if the Plant had nothing more to recommend it, none would refuse it a Place in their Collections.

They are eight Inches long, moderately broad, thick, and somewhat triangular in Form.

Their Colour is a very strong and elegant green; and they are cover'd on both Sides with white Tubercles, in the Manner of Warts. These have no regular Shape or Form, but lie scattered in a thousand Figures upon every Part of the Leaves, to the Extremity, where they terminate in a Point.

The Flower-stalk rises to the Height of two Foot and a half, and is round, firm, and of a glossy red, resembling a Piece of polish'd Coral. Toward the Top it droops with the Weight of a long Spike of Flowers.

These are oblong, hollow, and divided at the Rim into six irregular Segments, which turn back a little. Each Flower has a short and slender Footstalk, of a paler red than the principal Stalk, on which it hangs in a drooping Posture.

The general Colour of the Flower is red, but toward the Base it is greenish; and from this Part

there rise several Lines, or very narrow Streaks of white. These, as well as the green Base, are most distinct in the unripe Flowers: for in those fully mature, the red is almost universal.

For the rest, the Flower is like the others of the Aloe Kind, which we have described before. It is form'd of one Piece; it hangs to the Footstalk without a Cup, and within, there stand six Filaments, which are of the Length of the tubular Part, or a little more, with a single Style among them.

This shews the Plant to be one of the *Hexandria Monogynia* of LINNÆUS.

The Seed-vessel which follows, is oblong, and form'd of three Parts, mark'd with three Furrows, and divided into three Cells, in each of which are numerous small Seeds.

Culture of this ALOE.

This is one of the *African* Kinds which produce a great Number of Off-sets, and are easily propagated from them.

The best Soil for it is thus made:

Mix equal Parts of dry Pasture-Earth and Sand: add half the Quantity of soft Chalk. To four Bushels of this Mixture put a Peck of Lime. Mix these well, and let them lie out a Year.

Then fill as many Pots as there are to be Suckers rais'd. Let the Suckers be carefully taken from the old Plants; and laid on a Shelf in an airy Room, till the Bottom, where they adher'd, is dry: they are then fit to be planted.

The Pots must be very small; and the whole Management the same as in the other *African* Kinds which we have mentioned already.

If this Compost be not made in Time, the common Kind we have already directed for the *African* Aloes, will answer the Purpose: but it is in this particular Mixture I have seen the Plant rise to its full Perfection.

6. ORHIOIDE HYACINTH.

Plate XXI. Fig. 6. This is a Plant of the most extreme Singularity: worthy to be every where introduced among the most Curious; and demanding the Notice of the Botanical Student in a peculiar Manner, as it greatly departs from the exterior Form of the Genus to which it belongs, and very much resembles another.

Let the Student cast his Eye unprejudicedly upon the Figure given in the annexed Plate (which is taken from a very perfect Specimen of the Plant) and he will scarce distinguish that it

is of the Hyacinth Kind. The Leaves, the Stalk, and the Manner of growing, perfectly resemble the *Orchis*'s: and the exterior Structure of the Flower has nothing of the Hyacinth Form; nor Colour.

The Characters thus misrepresented by the Wantonness of Nature to the more careless View, are impress'd distinctly on the more essential Parts, and are too plain and obvious to admit Mistake.

BREYNIUS

Jan.

BREYNIUS hence called it by its proper Generical Term, Hyacinth, adding for its Distinction from the others; *Orchioides Africanus bifolius maculatus major flore sulphureo obsoleto majore*.

LINNÆUS gives it a specifick Title, sufficiently distinct in fewer Words, *Hyacinthus Corollis irregularibus sexpartitis*, Hyacinth with irregular Flowers; divided into six Parts.

The Root is round, white, and full of a slimy Juice.

The Leaves which rise from it are naturally two. They are long, considerably broad, undivided at the Edges, and obtuse at the End. They envelope one another at the Base, and there cherish and defend the Rudiment of the Stalk. Their Colour is a very beautiful green, and they are spotted with a dusky, blackish Purple.

The Stalk is thick, round, and of a pale green, spotted in the Manner of the Leaves with brown; and toward the Base a little ting'd with Purple; it rises between the two Leaves, surrounded a great Way up by their Bases, and grows to fifteen Inches in Height.

There are no Leaves on this, but its Top is decorated with a loose Spike of Flowers. These are in the highest Degree singular as well as beautiful; they stand at a moderate Distance; and they are larger than the Generality of the Hyacinth kind. Their Colour is a deep yellow: dusky on the Outside; and more bright within.

They appear gradually and slowly after one another, which is a great Recommendation.

Each is form'd of a single Petal, divided very deeply and irregularly into six Segments.

In the Centre rise six Filaments; and in the Midst of these is placed a single Style.

The Seed Vessel that follows each Flower is short, thick, and mark'd with three Furrows; it is divided within into three Cells, and contains numerous, very minute Seeds.

These Filaments and the single Style declare it to be one of the *Hexandria Monogynia* of LINNÆUS; the sixth Class, and its first Section.

Culture of the HYACINTH.

Jan.

The Plant is a Native of the *Cape of Good Hope*: it is found about the Sides of Woods; where the Ground is rich and damp, and where the dead Leaves shelter its Root in the colder Seasons.

BREYNIUS was the first Person who saw it in *Europe*, flowering in Mrs. de Flines's Garden.

Its natural Soil directs us how to cultivate it; and the best Method will be by Roots brought from the Spot where they are natural: if these be taken up when the Leaves fade, they will bear to be a long Time out of the Ground. After this it may be encreased by Off-sets.

For its Reception let the following Compost be prepared, and mellow'd by frequent Turnings.

Mix two Bushels of rich Meadow Earth; one Bushel of Pond Mud; three Pecks of Mould from under a Wood Pile; and one Peck of Marle; or if that cannot be had, of soft Chalk broke to pieces the same Quantity.

Put into the Bottom of as many Pots as you have Roots, several Pieces of loose Gravel, to keep open the Hole for discharge of Water, and then fill them up within one third of the Top with the Compost.

In the Middle of each Pot place one Root: take Care the Bud be exactly upright, and cover it three Quarters of an Inch with the Mould; sifting it carefully upon it.

Set these Pots in a shady Place, and once in five Days give them a little Water.

Let them remain there till the Bud begins to shew itself above the Surface, unless severe Weather intervene. Then place them in a more warm and open Situation; and at the Approach of Winter bring them into the Stove. Water them more frequently than before, but a little at a Time, and they will thus be brought to glow in all their Beauty.

Less Heat and less Care will bring them to flower, but not in their proper Strength, and the Flowers will be few and brownish.



C H A P. II.

The Care and Management of the Flower-Garden, Green-house, and Stove.

LET the Care of the Gardener, and his constant Attention to the several Parts of his Ground, save us the Tedioufness of Repetition, by going over his Borders in the same Manner we have directed in the preceding Weeks; but as the Frost may now be more dangerous than ever to his Seedling Plants, let him take redoubled Care to defend them.

The choicest Kinds we have directed him to sow in Boxes, and these he should now set in the Ground; or otherwise the Shelter he lays upon the Surface will not prevent the Effect of Frosts thro' their Sides.

Let him chuse the highest and the dryest Spot he can, and take Care that it be open to the South. Here let him dig out a Piece of Ground capable

Jan. capable to receive the Boxes, a full Spade deep : let him strew over the Bottoms some Coal Ashes, with the Cinders among them; and upon a slight Bed of these set in the Boxes.

Let him fill up the Space about the Boxes with dry Mould, mix'd with some Sand, and well beat in; and upon the Surface of the Earth in the Boxes, which will be then upon a Level with the Ground, let him strew some Pea Straw.

This Conduct will preserve the Seedlings thro' the most severe Frosts; and it is not needful except when they are severe.

We have directed on a preceding Occasion, the sowing some of these Flower Seeds on warm Borders, in the open Ground. These will require the same kind of Care. Let a good Quantity of Straw be thrown upon the Surface, and let a large Parcel of dry Mould be thrown into the Alleys between these Beds, if there be several, or all about the Edges if there be only one. In either Case let this additional Mould be carried up to the Level of the Bed; and let it lie a Foot thick round the Sides.

In this Manner the Generality of Seedlings may be preserved, and raised to Perfection without the Trouble that attends the Way in Boxes: but for the more tender and delicate Kinds, that Method is still preferable.

This Week let the Gardener procure a good Quantity of fresh Dung, and throw it carefully up in a Heap to warm gradually. It is to lie about eight Days in this Heap; and will then be fit for the making hot Beds for raising the tender Annuals from Seed. This Time of heating with twice well Turning, will make it perfectly fit for the Purpose.

The next Care must be of the Composts, which are to receive particular Kinds, and are suited to their natural Condition. These which lie in proper Heaps in some waste Place, must be turn'd over and mix'd, and broken very thoroughly.

The Business thus far done, let the Gardener visit with due Attention, his Green-house and Stove.

In what Manner he is to manage particular Plants we have deliver'd under each Kind, and need not repeat here; but there are some general Cautions.

The Season is naturally at the worst, and requires all the Regard to the Plants that can be shewn.

The Green-house must be kept close, and guarded with Shutters, and Mats in the severe

Nights; but as this always tends to weaken the Plants, every Opportunity must be taken of giving them Air in the Middle of tolerable Days. Jan.

Where there is a Flue carry'd under the Green-house, there must be a little Fire used to keep the Air in a gentle Warmth at these severest Times; and where this is not the Case, some very clear Fire must be made in a portable Furnace, or several Wax Candles must be kept burning in the very worst Time: Tallow do not well supply their Place.

The Practice in *Holland* is to keep a little Fire in one Corner of the Green-house with a few mouldering Turff. We have these in some of our Fen Countries: they are worth almost any Trouble of Carriage for this Purpose; and something tolerably like them may be dug in most Places where there is boggy Ground.

These will keep a Heat without Offence or Violence ever so long: a Couple of them will be mouldering two Days into Ashes without going entirely out; and a Couple more laid upon the Embers, will keep in the Fire in the same Manner. Nothing is so fit for this Service of the Green-house.

While the Windows are kept close, let the Waterings be very sparing.

Let all dead Leaves be taken off, and carried out of the House; and, wherever there appears any Mouldiness, let it be carefully and perfectly clear'd off with a Sponge dip'd in warm Water.

Let the same Care be taken in case of Insects; only instead of warm Water alone, let the Sponge be wetted in a strong and warm Decoction of Wood Soot and Tobacco.

This Week it will be very proper to repair the Bark Bed in the Stove.

One of the finest Days that happen must be chose for this Purpose; and the Work conducted with Dispatch and Care.

All the Pots must be taken out, and the Bark must be carefully stirred and laid level. If there want a Supply, a little must be added that is in good Condition, and has lain to drain; and the Pots must be set in carefully and evenly again. This will not only set those upright which had been settled unevenly, but the Heat of the Bed will be refresh'd gently by the Motion; and especially if any Addition of fresh Bark have been made, which will be very useful at this Season.

All this Time let the Heat of the Air be carefully kept up by the Thermometer.

Jan.

Jan.

S E C T. II.

The Business of the SEMINARY, for this Week.

THIS Week let the Business of Plantation be begun, if the Weather be any thing fit: if otherwise, nothing new is required in this Place; and the Gardener need only continue his before directed Care.

The proper Plantation for this early Time, is that of the hardier Kinds of Trees and Shrubs; and the Place where they are now planted must be the driest in the Seminary.

Let a Piece of Ground of this Condition be dug up a full Spade deep throughout, and a Spade and half where the Trees are to be planted; and below this let it be well broke with a Pickaxe.

The careful digging of the whole Ground where this Plantation is to be made, is a Thing not enough regarded. Dung, which our common Directors order to be carry'd by Loads into the Nursery, should in general be banish'd from thence entirely.

There are Exceptions, of which we have spoken; but, in general, nothing is so ill judged as to enrich the Ground of a Nursery, because

the Place where the Trees are afterwards to be planted, should be always richer than that from which they are brought. The Answer will be, that it promotes Vegetation: but to this there is a proper Reply. The digging the Ground all about before they are planted, and the repeating that digging between them afterwards will promote Vegetation in the same Degree without the Damage.

The great Thing for the Growth of young Trees is to give them free Liberty to push the Fibres which they naturally send every Way from the Roots after planting; and it is never so necessary as now; for the Intent is, that they should be rooted well before the Droughts of Summer.

I have experienced that in this Manner of Planting, the Trees have shot out Roots upon the first Warmth of the Air; and from time to time encreased them till they have appeared as vigorous in the Season of throwing out their Leaves, as those which had been two or three Years planted.

S E C T. III.

POMONA, or the FRUIT-GARDEN.

IF there be any of the Fruit Trees not yet clear'd from Moss, let the Gardener this Week, if there come a moist Day, compleat the Work. Let the hollow Iron he uses for this Purpose be ground to an even, but not sharp Edge.

The Design is, that by following the Shape of the Branch with this Instrument, he may shave off every Piece of Moss; as well those which lie only in Crusts, as those which rise from the Surface; and that without wounding the Bark.

Nothing can answer this Purpose but a clean round Edge in the Instrument; for if it were sharp it would cut the Rind; and if nicked or battered it would scratch, which would be full as bad.

This is a Season at which the cleaning them should by no means be omitted, for the latter End of February is the Time when the Seeds of Mosses ripen. There is therefore the same Advantage in displacing the Tufts now, as there is in pulling up Weeds in the Flower Borders before their Seeding.

N^o 21.

Wherever new Trees are to be planted, let the Ground now have its last Turning, and it will be proper to dig in some fresh rich Mould from a Pasture. This done, lay the Surface level, and observe after two or three Days, if it settles irregularly, to throw in a little fresh Mould, and lay it even again.

If the preceding Years Barrenness have shewn the Trees in any particular Spot, to be in a Condition of Decay, let this Damage be repair'd by digging round about them, and by turning the Earth at considerable Distances.

I have seen an old Tree restored to its Vigour by digging up a Piece of Ground that was on the other Side of a Gravel-walk; so far do the Roots extend. This digging breaks off the Fibres; and throws the Mould loose and free upon those broken Ends; and we have observ'd before, that this is the true Method of raising the Vigour of Trees; for abundant new Fibres are shot out from the broken Ends; and having a free Mould for spreading, they draw in a great deal of Nourishment.

S s s

Open

Jan. Open the Glasses of the hot Beds in which the Pots of Strawberries are placed for an early Crop, as often as the Weather will any way permit; for upon the giving them Air at this Season, depend not only the Vigour of the Plants, but the Flavour of the Fruit. They must also be water'd every other Day.

The Business of pruning may yet be continued

Jan. as we directed before; and as the hardiest Kinds are dispatch'd, it will be safe to advance to those a little more tender: but for the tenderest Kinds of all, there is an absolute Necessity of waiting the breaking of the Frost Season; for their Wounds will not heal while the Air is in such a Temperature.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

THIS Week should be prepared that important Article in the Kitchen Ground, the Hot-bed for raising early Cucumbers and Melons.

The Directions given for this in common Books, are in many Articles false and imperfect.

I fear there cannot be Ignorance in the Cause of this, but a worse Occasion: that the Truth is very well known, but kept back on Purpose; and that Gardening is not deliver'd faithfully in Books written by Gardeners.

They grudge the Publick that Knowledge which they professedly write to communicate, and are unwilling to make all the World Proficients, tho' they undertake the Work with that specious Pretext. This is too common a Fault in little Minds, and we are glad in the present important Instance to obviate its Mischiefs.

We have before us the Communication of a very skilful Gardener on this Subject; and with that Confirmation of our own Experience, we shall venture to promise, that in the following Account of the Hot-bed, the whole Conduct shall be laid down so clearly, that the Master of a Garden shall be able, with a little Attention, to judge whether his Servant act right in every Article; and the most unexperienced shall be able to conduct the whole Business without Error.

Construction of a Hot-bed with Dung.

The Hot-beds now in use are of two Kinds; those of Dung, and those of Tanners-bark: the Dung Beds are fittest for Kitchen Products, the Bark-beds for raising tender exotick Plants.

The Management of the Dung Hot-bed consists of three Articles, 1. The Choice. 2. The Disposition of the Dung; and, 3. The keeping it at a due Degree of Heat.

We will suppose a Gardener intends a Hot-bed for one Light. The Directions for making this will be more intelligible than if we take in more, and they will equally serve for any Compass. A Load of Dung is the proper Quantity for this Purpose; and it must be such as has a good Quantity of the Straw or Litter among it.

The common Way is to take fresh Dung from the Stable, but this is not the Practice of those

who give the Direction. Many have been misled by this, and have destroy'd their Plants by its unconquerable Steam. If older Dung is not to be had, this must be brought to a due Temper, by mixing five Bushels of Coal Ashes, well wetted, with the Load; and leaving it in a Heap for nine Days. After this it will be fit for Use, but it will still be very much inferior to such as is of a proper Keeping; and will require great Care in the Management. The right Dung is such as has a good Quantity of long Litter, and has lain three Weeks.

With a Load of this mix two Barrows of Coal Ashes dry, and lay it in a Heap four Days. In this Time it will be fit for Use, and the Bed is to be then made in the following Manner.

Mark out upon the Ground the Shape of the Light, and then draw another Line eight Inches beyond it every Way; here begin to lay the Dung upon the Surface of the Ground.

Those who direct these Things, order a Trench of the Bigness of the Light to be dug a Foot deep for the Dung; but this is very injudicious. Wet may settle in this, and chill the Bed; and if that does not happen, yet it is not so easy to continue the Heat in the Dung when any Part is Under-ground, and out of Reach.

For this Reason let the Bed be altogether upon the Surface; and begin to make it by shaking the longest Part of the Litter first upon the Ground. Lay this even, spread it with the Fork, and tread it down. The longer it is the more treading it must have; and it may thus be laid to the full Extent of the center Line, as it will then be eight Inches longer and wider than the Frame that is to cover it.

All the Time that the Bed is making up, take the longest that remains of the Litter; and by this Means, by that Time the Bed is near finish'd, there will remain only some clean Dung without any Litter, or with very little at most among it.

This is to be spread at the Top of the Bed, and laid smooth and even as the rest.

When the Bed is carried up to its Height in this Manner, if well wrought, it will be about two Foot nine Inches thick, and this even laying

Jan. laying and treading, and the reserving the clean Dung for the Top, are all great Advantages: the Effect they have, is, that the Bed sends up less Steam, and the Heat continues longer: these are the two principal Things to be wish'd for in such a Bed.

The common Direction is, to raise the Seeds in a kind of coarse Hot-Bed, under a Bell-Glass. The Way is, to draw away a little of the outer Part of the Dung; to cover it with Mould; and sowing the Seeds on this, to throw on more Mould, a Quarter of an Inch thick, and so to raise the young Plants. Let our Gardener use a better Method.

When he has finish'd his Bed of Dung, let him put on the Frame, and keep the Glass down: this promotes the Heat in a regular and proper Manner. When the Warmth rises properly, give a little Air to moderate it; and the same Caution lets off the Steam.

Raise the Plants in this Manner:

Fill two large Garden-Pots with rich light Mould: sow the Cucumber-Seeds upon the Surface, and sift over them a little more than a Quarter of an Inch of the same Mould.

Set these Pots in the Dung up to the Rim; but observe that they do not receive too much Heat: this will be seen by the Condition of the Mould about the Edge: if that keep in a due Temper, and retain its natural Moisture, all is well, and the Pots are to remain as they are; but if the Mould grow dry, and crumble, the Heat is too much: in that Case raise the Pots a little Way out of the Dung, and give them a little Water.

With this Management the Plants will rise very favourably; and they will be, from their first Shooting, accustomed to the proper Degree, and Kind of Heat.

By the Time the Plants appear, the Bed will be in a due Condition to receive the Mould.

Let this be very light and rich, and lay it evenly all over the Surface, four Inches and a half thick.

This will naturally receive the Plants rais'd in the Pots, by the Means of the same Dung; and they will not be in Danger either of burning or steaming.

When the Plants have been two Days out of the Ground, they will be fit for planting in this Bed.

Draw Lines upon the Mould lengthway and cross-way, at two Inches and a half Distance; and in the Centre of each Square they make, place one of the young Plants. Let them be set in with Care, and only the Seed-Leaves, and a Straw's Breadth of the Stalk, be above the Mould. See the Mould be well settled about them; but give them no Water.

In thirty Hours they will be very well rooted again; and they are then to be manag'd with due Care.

Set some Water to warm in the Bed, to be ready to use occasionally; for now they are rooted they may be water'd, and indeed they will require it.

Let Care be taken that the Bed keep up its Warmth, and that the Steam which rises from it do not hurt the Plants.

For the first Purpose, a Mat must be thrown over the Glass at Night, and in the Day-time in severe Weather; and this must be only of such a Bigness as to cover the Frame, and not to hang down upon the Sides of the Bed. This answers the Purpose of preserving a due Heat, without drawing up a hurtful Steam from the Dung, as a longer Covering often does, to the Destruction of the Plants.

The other Purpose must be answer'd according to the Season, either by admitting Air into the Beds, or by turning and wiping the Glasses. The first is the true Method: but, when the Weather will not permit, the other is a useful Expedient.

When the Air is any thing mild, let the Cover be rais'd a little, in the warm Part of the Day: this answers the double Purpose of letting out the Vapour, and of giving fresh Air to the Plants; which, whenever it can be done, is of the utmost Service to their Growth.

When the Severity of the Season does not permit this, the Glasses must be turn'd the dry Side downwards. This prevents the hurtful Moisture, condens'd from the Vapour of the Bed, from falling upon the Plants.

As these advance in Height, some fresh Mould must be brought in; and after it has lain a Night in the Bed, it must be drawn up about the Stalks, covering them up to the Height they had when first planted.

In this Time let the Heat of the Bed be frequently examined; and if there be any Sign of the Heat decreasing too fast, let Care be taken to keep it cover'd in the Night, and some fresh Litter be laid round the Sides.

This not only keeps off the cold Air, but heating there itself, it communicates its Warmth to the Dung within.

This never fails to keep a Bed in Order, when it is rais'd according to our Directions altogether above Ground; but I have seen more than once, when the Coldness arose from some Moisture in the Trench, of such as were made according to the common Practice, and then no Addition of fresh Dung was of any Service.

If the contrary Extreme threaten, the Method to allay the Heat, is to thrust a large Stick into the Bed, at the Sides and Ends, in three or four Places, and leave the Holes open. These let in Air, and let out the Steam; and the Bed will soon be brought to its due Temper.

This Management will preserve the Plants so long as they are to continue in their first Bed; the proper Period of which is, while they have only the two Seed-Leaves.

When the first of the rough Leaves appears, they must be remov'd into a new Bed, the Construction of which, together with the Removal of the Plants into it, we shall consider when it comes to be the Time of doing it.

This Care taken of the most important Article for the Week, let the Gardener consider in what else

Jan. else the Season will permit him to bring forward Crops.

Whatever he can sow now, with any Hope of Success, will be valuable by the early Time at which it will come in for the Table; and we shall advise him to risque many a bold Sowing upon that Expectation. If these fail, it is only the Loss of the small Quantity of Seeds.

The Labour in preparing the Ground is not thrown away; for we hope our Pupil, in this little understood Art, knows by this Time, that all digging and breaking of the Earth, serves to enrich it; and that Labour is the best Manure for the Kitchen-Garden. Dung gives an ill Taste to most of the Products: the Sweat of the Brow is the wholesome Enrichment of the Soil.

Upon this Plan let the Gardener dig up a Couple of Pieces under some Fence, where there is Warmth and Shelter, for sowing of Radishes and Carrots.

Let the Ground be dug deep, and well broke; and when the Seeds are sown, let them be covered a little deeper than is usually done, and the Mould be beaten down over them with the Back of a Rake.

They will thus be preserv'd during the Time of making their first Shoot of a Root; and they will from this have a much better Chance thro' the whole Time of their Growth.

Dig up also two Pieces for small Crops of Pease and Beans. The *Windsor* Bean may very well be ventur'd into the Ground this Week, and will probably rise in good Order, and bring forward its Crop without Accidents.

Small Salleting may very well be sown a few Weeks hence upon the open Ground; but at this Time it should be allow'd a slight Hot-Bed. Those who in one Page direct otherwise, contradict themselves and their Originals in the next.

Our Gardener has, with a great deal of Care, preserv'd Cauliflower Plants under Glasses, thro' the Winter, for an early Crop. The Dangers to which they would have been expos'd, without this

Shelter, will soon be over; but let all Care be taken of them till that Time.

When the Nights are extremely severe, let Mats be thrown over the Glasses; and, when any tolerable Weather comes, let them be rais'd a little in the Middle of the Day. If a decay'd Leaf be seen in any Part, let it be taken off with Care. Draw up the Mould about the Stems of the Plants, and dig the Earth on the Outfides of the Glasses.

Mint will be a very agreeable Herb in its young and tender State, for the following Months, and a Hot-Bed must be allow'd to raise it; but this need be only of a slight Kind; a little long Dung bury'd in a Trench under a warm Wall or Pale, and cover'd six Inches deep with Mould. From the Pale let there hang a Mat, to be drawn down to the Ground upon Occasion; and let this be peg'd, to keep it firm, when the Weather is severe. At other Times it may be rais'd occasionally for admitting Air to the Plants.

The Mint must be planted in this Bed at small Distances; and it must be water'd lightly from Time to Time, with Water that has stood in a Pot, plac'd half Way in a Dunghill, to warm. This Way it will rise early, and continue to flourish the more it is cut.

A very large Supply made be had from a small Bed of Mint planted in this Manner; and there are many other of the Spring-Crops which may be forwarded by a like Contrivance, at a small Expence and Labour.

Let the Gardener remember to put two Ends of Mat to the Extremities of the Piece which is to fall down for the Defence of the Bed in this Plantation; for if they be left open, the Covering in Front will be of little Service. Otherwise, the pegging it down will keep the Bed sufficiently close for such Purposes; and there will all the Time be a tolerably free and pure Air in the cover'd Space. This would be useful in the highest Degree for all Hot-Bed Plants. But where a greater Degree of Heat is requir'd, no Art can give it with the needful Closeness of those Beds.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XXII.

For the first Week in FEBRUARY.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Curious Plants and Flowers now in their Perfection.

I. APENNINE ADONIS.

Feb.

Plate

XXII.

Fig. 1.

AN elegant, bold, and noble Plant; native of *Europe*, and bearing our Winters without Danger: rising to a small Height from the Ground, but covered with vast Flowers, and those of a most singular Dignity in Aspect.

The Botanists, for many Ages, have been familiarly acquainted with it; but 'twas not at first known by the proper Name.

Most have call'd it an *Helleborus*: ALPINUS, a *Bupththalmum*. LINNÆUS, who has refer'd it to the proper Genus, *Adonis*, adds, as its specific Distinction, *floribus pentdecapetalis fructu ovato*.

The Root is form'd of numerous thick and black Fibres, spreading every Way, and entangling variously one among another.

The first Leaves are extremely elegant; their Colour is a fine deep green, and their Foot-stalks are purple: they are divided in the pinnated Manner; and, what may be call'd the Pinnæ, or distinct Leaves, are oblong, pointed, and have some Breadth.

The Stalk is round and thick, tho' low. It wou'd be upright, but that the Weight of the Flower is too much for its steady Support.

Where it rises from the Ground 'tis reddish; and often there hang about it a few Films of a

Numb. XXII.

purplish brown. Upward it is of a pale green, with some Tinge of yellowish; and it is all the Way dusted with little grey transparent Globules. These are the Extremities of so many round evanescent secretory Ducts; as the Hairs of other Plants are the more permanent Extremities of theirs. This Use of them GUETTARD discover'd, LINNÆUS adopts the Opinion; and the Microscope confirms it.

The Leaves on the upper Part of the Stalk have less Breadth, and are more irregularly divided than those at its Bottom; but they retain the same Tinct only fainter.

The Flower is vast; and when the Root has stood to get good Strength, and numerous Stalks rise from it together, the Tuft is crown'd with a continued Head of them, conspicuous at a Distance, and elegant on nearer Examination.

The Bigness of the Flower, when the Plant thrives perfectly, is that of the largest single Anemone: its Colour perfect gold.

The Cup in which it stands is in itself beautiful: five elegant oval Leaves compose it, and they are of a fine yellowish green; a proper Gradation of Nature between the perfect green of the Leaves, and full yellow of the Petals.

The Body of the Flower is form'd of an uncertain

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Feb. certain Number of Petals, usually twelve or thirteen; when, in the fullest Number, fifteen: they are oblong, broad, and irregularly terminated: and whether full expanded, or half blown, they have a most striking Appearance.

When fully open'd, the Colour is somewhat paler, and more delicate; but when half blown there is a Spirit in the Flower that very well atones for the duskier Colour.

In the Centre stand numerous short Filaments; they form a thick Tuft, and each is top'd by an oblong and somewhat crooked Button.

In the Midst stand numerous Rudiments of Seeds, collected into a kind of Head; and on these are plac'd pointed and bent Stigmata, to receive the Dust from those numerous Buttons.

The Fruit is of an oval Form, and is compos'd of naked Seeds, fix'd in five Series to an oblong Receptacle. Their Shape is irregular, angulated, and bent at the Top.

Our Student in this delightful Science, now knows, that to discover the Class to which this Plant belongs, beside observing the great Number of the Filaments, he must trace them to their Origin. He knows that a great Number of Stamina is a Character in common to the *Icosandria* and *Polyandria*; and that the Place of their Insertion makes the Difference. They here rise from the Receptacle: the Plant is therefore of the *polyandrous* Kind; and its numerous Rudiments and Stigmata shew it one of that Sub-division, thence named *Polygynia*.

Culture of the APENNINE ADONIS.

The Culture of this elegant Plant we shall lay down from Practice; and shall tell the ingenious Gardener how he certainly may raise it to the most full Perfection, because the Method we shall lay down has so succeeded.

As a Native of the *Apennines*, and of the coldest Parts of them, for in such it thrives best in its wild State. Our Pupil will understand that it requires no Stove or Greenhouse: the open Ground will serve it perfectly: and to know the Condition of the most proper Soil, he need only be told that it flowers best where native, when it has a light but not dry Earth, and a Noon Day's Shade.

For its Soil, let him dig out some Pasture-Land from under the Turf on the Side of a Hill, where the Mould is light and mellow, and is accustomed to some settling of Wet.

Let him chuse for its Place some small Spot

in the Garden open to the Winds, for their Blast favours it; and where the Mid-day Sun is in some Degree kept off by Trees.

Let him take out the Mould here two Foot deep; let him lay on the Bottom a thin Coat of Clay, but not too firmly beaten; upon this let him scatter some large Gravel, and then pour in his Mould.

This Spot being levelled, will serve either to receive the parted Roots from another Place, which should be set in the latter End of *August*, or the Seeds.

The first Way is the easiest; but 'tis from the other we are to expect the finest Plants.

The Method is this:

If the Gardener have a Correspondence where it is native, let him procure the Seeds from thence: if otherwise, let him select them in this Manner.

When the Plants are in Flower, let him observe the strongest Root, which he will know by the Number and Height of the Shoots. All these let him cut away, except one; and then let him with a Trowel dig up the Ground about the Plant, and give it once in two Days a little Water.

When the Flower has fallen, and the Seeds begin to shew themselves of some Bigness, let him forbear Watering. All he has then to do, is to watch their ripening. When they are grown to the full Size, and are somewhat harden'd, let him cut off the Head carefully, and lay it on a paper'd Shelf.

When the Seeds fall off, let them be wrapp'd up in Paper, and kept till the first Week in *September*; then let them be sown thinly upon the Piece of Ground prepar'd for them as we have directed; and a third of an Inch of lighter Mould sifted over them.

Let a few Pieces of Furze-Bush be thrown upon the Bed to prevent Accidents; and in dry Seasons let a little Water be allow'd it.

After this, when the Plants are up, let some Pea-straw be scattered over them in hard Weather; and from that Time let them be kept clear from Weeds.

In Spring let them be thin'd, by taking up the weakest, where they have risen too thick; and let these be planted out into other Parts of the Garden.

Let the others be left at fifteen Inches Distance every Way in the Seed-Bed, and not remov'd afterwards. Thus being allow'd full Room, and kept free from Weeds, they will flower in great Perfection.

Feb.

Feb.

2. JUDAS TREE.

Plate XXII. Fig. 2. We follow here our first establish'd Custom of calling Trees, known to the common Gardeners, by the Names under which they are us'd to hear of them; but we shall not leave the Student uninform'd of the more proper.

The Name *Judas Tree* has been given to this from a Fancy of one of the Fathers, that it was upon one of them *Judas* hang'd himself. The Vulgar give that Distinction to the common Elder; but that is more unreasonable. All there is for the Foundation of this being the Tree, is, that some of the earliest Writers say he hang'd himself upon a *Cercis*.

LINNÆUS has indeed attributed the Name *Cercis* to it; but 'tis from THEOPHRASTUS we are to learn what *Cercis* is; and all he tells us of it, is, that the Seeds are held in Pods.

So uncertain is the Propriety of scientific as well as vulgar Names; but when they are appropriated and receiv'd this creates no Error.

All the old Writers call it *Arbor Judæ*, and *Judaica*. — C. BAUHINE, *Silqua sylvestris*: and LINNÆUS, to the Term *Cercis*, which he has made generical for it, adds, as a Distinction of the Species, *foliis cordato-orbiculatis glabris*: *Cercis*, with smooth rounded Leaves, heart-shap'd at the Base.

It is a Tree of moderate Growth when properly train'd into Shape; but in its native Wildness rather is of the Shrub Form.

The Root spreads far: the Trunk is covered with a deep brown Bark, and the young Twigs are purplish.

The Branches are not numerous, nor do the Leaves stand thick upon them; but their Breadth is considerable enough to atone for the Smallness of the Account, and they cloath the Head of the Tree very handsomely. There is a Merit in this standing so distinct, because their Form is the more accurately seen, and is very regular and agreeable.

Each has its own long and tender Footstalk, and this is purplish.

The Leaf itself is nearly round; indented a little for the Reception of the Footstalk; and at the opposite Part terminated often by a kind of Point: this is the extreme Part of the Middle Rib.

The Colour of the Leaf is a deep green, with a Tinge of blueish: and the Veins and Ribs in the new Leaves are red.

These elegant Leaves the Tree shews long in all their Beauty; and as the Winds sport among them, their under Sides occasionally turn up, and by their greyish Hue diversify the Scene.

The Flowers appear early in Spring, and the Leaves not till some Time after their first shooting. They are extremely pretty. They rise on divided Footstalks from the lower Parts of the Branches; and their Colour is a beautiful red with a Tinge of Crimson and of purple. Their Form resembles that of the *papilionaceous* Kind; and the

Fruit which succeeds them is a Pod. This is long, flat, thin, broad, and of a purplish Hue, with several brown Seeds.

This is the general Aspect of the Flowers, and Fruit; but the Student, in this pleasing Science, will not be satisfy'd till he has examined them more strictly.

He will find the Cup that receives each Flower, hollow, and rising on one Side; short, and divided at the Rim into five obtuse Segments.

Into this Cup are inserted the Petals, forming the Body of the Flower; and by their Form and Disposition they strongly mimic the *papilionaceous* Kind. There are two Alæ turn'd upwards, and fix'd to the Cup by slender Bottoms: one Petal shorter than the Alæ, and plac'd under them, forms the Vexillum. Its Shape is roundish, with a little hooked End: and below these stand two others, forming together a Carina of a heart-like Shape, in which are plac'd the Organs of Impregnation, rising from its Bottom.

The Filaments are ten: they are distinct from the Base, and they are bent with the Carina: four are longer than the others, and the Style is single.

There is not a Plant in all the Course of the Science, which so much as this mimics the Characters of the Classes to which it does not belong.

The *papilionaceous* Form of the Flower would refer it to the *diadelphous* Class; but that all the Filaments are loose: and altho' these are ten, and in the *Tetradynamina* naturally only six, yet the Superiority of four seems to refer it thither.

LINNÆUS, from the Number and distinct Growth of the Filaments, refers it to the *Decandria*; and its single Style places it among the *Monogynia*, the first subordinate Distinction in that Tribe.

The Student, in his strict Examination of the Flower, will find a slender Body supporting the Rudiment of the Pod: this is the Nectarium. Its Place and Office is singular; but it is nothing more.

Culture of the JUDAS TREE.

It is a Native of the warmer Parts of Europe: Spain and Italy abound with it; and there are many Trees of it wild in the South of France.

It loves a rich and mellow Soil: it will very well endure our coldest Weather in the open Air; and, under good Management, will ripen Seeds with us which will produce good Trees.

This is the best Way of propagating them; for a great deal of the Beauty depends upon the regular Growth; and as the Tree naturally runs out into great Wildnesses, there is no Way to be secure of this, but in having it to manage from a Seedling.

Let the Gardener dig up a Piece of Ground in the Seminary, where the Soil is light and not over rich; for the Seeds will very well grow in this, and the Trees will thrive the better for it when they are re-

Feb. remov'd, at four Years Growth into a Soil like that they have in *Italy*.

Upon this Bed let the Seeds be scattered thinly, with an even Hand; and let there be half an Inch of the same Mould sifted carefully over them.

The best Seeds are those obtained in the Pods from *Spain* or some other warm Parts of *Europe*; but if there be any Difficulty in procuring these, such as have ripened on our own Trees will do.

Once in three Days let them be gently watered, and they will come up regularly.

The Time of sowing them is various; some doing it as soon as they are ripe, and others toward Autumn: but we have found by Experience the Middle of *March* to be vastly the best Season: the Seeds are promoted in their shooting by the natural growing Warmth of Spring, and they get Strength to bear the succeeding Winter with a moderate Shelter.

Such as are sown at other Seasons, often rot in the Ground for Want of a favourable Temperature of the Air to bring them up; or they require so much Shelter in the Winter, that it is difficult to harden them properly the next Spring, but that the late Frosts kill them.

In the Way we direct they will rise soon, and Weeds will come up with them. Let these be cleared away from time to time; and as soon as it can be seen which are the stoutest Plants, let them be thin'd, by taking up the weaker.

When they are thus reduc'd to a proper Distance, they must have Water once in two or three Days in Summer, and the Mould must be frequently and well stir'd and broken between them.

In Winter some Hoops must be placed over the Bed, and a Mat drawn over it in sharp Weather. This must never be suffered to remain over the Bed longer than there is Occa-

Feb. sion; and toward the End of Winter it must be used most sparingly, that the Plants may bear the free Air of Spring uninjured.

In the last Week of the succeeding *March*, let a Piece of fresh Earth be dug up, and very well broke in another Part of the Nursery: let the young Plants be very carefully removed out of their Seed Bed, and set immediately in the new Soil at two Foot and an half Distance.

Close by each Plant thrust in a strong Stake, that as the Stem rises it may be tied up, to secure its growing straight.

When the Plants are all in, and the Stakes fixed, bring them gently to their Supports with a Piece of Bass, and give the whole Bed a gentle Watering.

This must be repeated twice a Week in dry Weather. At the Approach of Winter there must be some Pease-straw strown over the Ground, to defend them in some Degree from Frosts; and the Shoot must be again tied up as it rises.

In the *February* following, let the Earth be carefully dug between them; and at the same Time let the Side-shoots, that grow too low, be taken off, and the Head left entire.

This must be repeated the succeeding Year; and the next after that, they may be transplanted into the Places where they are to remain.

The Soil in these Places should be such as we have described, as agreeing best with them where they are native; and they will, by this Management, rise to five and twenty Foot, in a very handsome Form.

The Gardener, thus understanding the whole Management of this elegant Tree, will in few Words receive our Directions for others of a like Kind.

3. P O L Y A N T H O U S C R O C U S.

Plate
XXII.
Fig. 3.

The Variety of Crocuses that paint the Borders of every Garden at early Spring are very numerous; and this unquestionably is the most specious of them all. The Variation in its Tinct is no slight Recommendation to this allowed Pre-eminence; but its strongest Title is the Number of the Flowers which rise together from one common Stock.

Let not the Student, while we recommend it for these Advantages, place it in an higher Rank in the Science than it deserves: however luxurious Culture may have encreased the natural Number of the Flowers, or stained them with different Shades of Colouring; it is no more than Variety of the common Kind, the natural pale Spring Crocus.

This LINNÆUS distinguishes from the other Species, by the Addition of *spatha univalvi radi-*

cali, corollæ tubo longissimo, Crocus with the Scabbard from the Root, formed of a single Piece, and with the Tube of the Flower extremely long.

Under this Distinction stands the common Spring Crocus in the more accurate Writers; and the present singular Appearance of it is not distinct in Species, but one of the Effects of Culture.

The Root is roundish; white within, covered with a brown Skin, and from the Bottom sends out many Fibres, long, moderately thick and white.

The Leaves are many; and those and the Bases of the Flowers, with the Scabbard which rises from this Part, and serves them as a Cup, unite in a Manner together, and form one common Body.

The

Feb. The Leaves are long and very narrow, they naturally grow in an arched Form, rising circularly from the Base, and drooping at the Point: their Colour is a fine deep green, and each has along the Middle a Line of perfect white all the length.

The Flowers rise from the Head of this united Body, with long Tubes, which serve them as Stalks, and they are large and extremely beautiful. The Cluster of them from one Head is often eight or ten, and they display themselves in various Positions, some upright, some drooping inwards, and others turning out, so that the whole Tuft represents a Noddy contrived in the most artful Manner.

The Body of the Flower consists of six Segments rising from the Tube, and these so large, that they resemble Petals.

Their Ground Colour is a greyish or pearly white, but they are stained and diversified in the most elegant Manner with purple, and with crimson. The three outer Segments usually have the Colour deepest and in greatest Quantity. The inner ones are sometimes perfectly white; often ting'd, but lightly. The Degree of the Colour varies extremely, but this rises from Culture; and the Art of the Gardener must be employed to make it the strongest and most lively.

The Student examining this Flower from its Origin, will find it rises shielded by a Scabbard in the Place of a common Cup, and that this consists of a single Piece.

The Tube of the Flower he will find expand gradually till it comes to the Place where it divides into these six Segments. They are oblong, of a somewhat oval Form, and terminate obtusely.

In the Hollow form'd by this stand three upright Filaments, very conspicuous, and crowned with arrow-headed Buttons. The Style is single, and stands in the midst of these; and at its Summit is placed a large and conspicuous Stigma, or Head, divided into three Parts.

The Seed Vessel is roundish, and marked with three Furrows, containing in three distinct Cells many round Seeds.

The Class to which the Plant belongs is very obviously written in the Flower; the three conspicuous Filaments refer it to the *Triandria*, and the single Style shews it one of the first Section of that Tribe the *Monogynia*.

Culture of this CROCUS.

We have observed already, that this beautiful Plant is no more than a Variety of the common Spring Crocus, in whose Flower there rise from Culture various Tinges and Degrees of Colour in different Dispositions.

These, a subsequent Attention to the best Methods of raising the Plant varies more and more; and the Luxuriance of Nature, supported the same Way, throws forth the numerous Flowers together.

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Feb. In every Condition it is of the same Origin; and is a Native of the mountainous Parts of *Europe*: being of no warmer a Climate than our own; it needs no artificial Warmth to raise, or Defence to preserve it from the Seasons.

The Parting of the Roots is the common Method of propagating it; and may be needful to have Recourse to it for the first stocking of the Ground; but he who imbibes from us the true Spirit of Gardening, will think the Practice very much beneath his farther Notice.

To proceed for ever by parting of Roots is to see always the same dull Round of Flowers. The commonest Kind of Crocus serves for the Purposes of Science; for in that the Filaments, and all the other essential and characteristick Parts, are seen as obviously as in the best: but for the Beauty of their Colouring, let the Attention be employed upon the raising them from Seeds: this, though slow, will be always found the true Method to produce Variety.

This is a Thing neglected by the Generality, and not laid down by common Authors; but we shall explain it at large; and the Reader may be assured, he will not fail of Success in prosecuting the Methods we direct; because they are the History of our own Practice.

The sowing of the Seeds is the first Article, and a great deal depends upon it.

The Way to have fine Flowers is to favour the ripening of these; for if they be poor, tho' they contain the Principle of Vegetation, little will be produced of Beauty, or of Value.

Let our Gardener select for his Purpose a fine Cluster of the Plant: the best is, that in which the Flowers are most numerous, and have the strongest Purple.

Let him fix upon this as soon as the Flowers are enough open to shew their Beauty; and let him take off three or four of the lowest, leaving only three, or at the most four, to blow to Perfection.

Let him give the Plant a little Water every Day; and shade it from the Noon Sun continually: this will keep it much longer in Flower, and consequently the Seeds will ripen gradually.

When the Flower is fallen, let the same Care be continued that nothing hurt the Plant: let it have Water moderately once in three Days; clear away all Weeds, and break the Earth round about it with a Trowel, but not too near the main Root.

The first Week in *May* the Seeds will be ripe. Let the Head be carefully taken off, and laid upon a paper'd Shelf, and then prepare a Compost for sowing them in this Manner.

Mix together a Barrow of fresh and light Pasture Earth, half a Barrow of Pond Mud, a Bushel of old Cow Dung, and half a Bushel of Sand; beat and break all these very well together, and sift the whole through a coarse Wire Sieve, throwing away the Lumps, which will be principally the worst Part of the Cow Dung.

U u u

Make

Feb. Make a Box of rough Boards, a Yard and half long, a Yard broad, and fourteen Inches deep. Bore half a dozen Holes at Distances in the Bottom, and cover them with some rough Gravel, that the Water may always have free Passage. Pour in the Mould, and set the Box upon some Brick Supports, one Brick Thickness above the Ground.

By that Time all this is ready, the Heads will be hardened on the Shelf, and the Seeds ready to fall out of them.

Let them be all clear'd out, and spread at a little Distance; and after they have lain four Days, and the Mould in the Box is settled, level the Surface, and scatter them upon it, carefully.

The first Week in *June* is the best Time for this sowing. The Seeds must be covered a Finger's Breadth with the same Compost sifted over them; and the Place where the Box stands must not be open to the Noon Sun, but the Morning.

Let the Gardener observe from time to time the Temper of the Mould; and when it is too dry, give it in an Evening a very gentle Watering: if very hard Rains come, let a Covering be hung over the Box; and let Care be taken to destroy all Shoots of Weeds as soon as they appear.

At the Approach of Winter, let the Box be removed to a Place where it may have all the Sun it can.

In Spring it must be removed into the former Situation, and treated as before. The Trouble is not much, and the Foundation is thus laid for a fine Variety of Flowers. Weeds and Mofs are to be cleared off as they rise, and the young Plants are to have frequent and very gentle Waterings.

When the Leaves are decayed, let some fresh Earth be sifted over the Roots, about a quarter of an Inch in Thickness, and toward Winter let the

Box be again removed into its sunny Situation.

Feb.

The succeeding Summer, when the Leaves are decay'd, let the Mould be all carefully broke and loosen'd in the Box. A Border must now be dug up for the Roots; and the best Soil is common Garden Mould with some fresh Pasture Earth dug in among it. Let as much of this Soil, as will make two Inches in depth, be kept off, and let Lines be drawn lengthwise, and across at three Inches Distance, and the Earth well broken that lies out.

This Border being ready, let all the Mould from the Box, which was before loosened for that Purpose, be carefully sifted, and the Roots taken out.

Let one of these be set upright in the Centre of every Square marked upon the Border by these Lines; and let the Mould be sifted upon them, which was left out for that Purpose.

Thus let them remain, keeping the Bed clear from Weeds till Spring; and then let the Mould be carefully and gently stirred at the Surface, and a quarter of an Inch of fresh sifted on.

Let the same be done in Autumn, when the Leaves are decayed; and the next Year they will return all this Care by a fair Promise of fine Flowering.

Thus will be produced an original Stock of the finest Kinds; among which there is no doubt of meeting with many new ones: and after this they may be multiplied by parting the Roots. This should be done once in three Years.

Their proper Management then is this. Every Off-set must be planted in a separate Hole two Inches deep: not made in the common Way with a Dibble, for that hardens the Earth about them; but with a Trowel, that the Mould may lie loose: those which are intended to produce Off-sets should be suffered to remain in the Ground the full Time we have mentioned. The others should be taken up when the Leaves are decayed, and planted again in *September*.

4. GREAT-FLLOWER'D PULSATILLA.

Plate
XXII.
Fig. 4.

It is not common for a Native of our own Country to make a Figure in our Gardens; but this is one of a few Instances that Nature has not denied us Plants as specious in their Aspect, as those we bring from *Africa* or *India*.

The *Pulsatilla*, which covers with its living Purple whole Spots of the *Gogmagog Hills* near *Cambridge*, and *Bernak Heath* and *Lowthorp Common* near *Stamford*; which paints the dry Pastures of *Leadstone-ball* near *Pontefract**, and glows, though less regarded, on the rugged Hills of *Wales*, and the cold northern Mountains, is the same Plant we see in Gardens under that Name, and which deserves to be seen

there oftener: equal to the Generality of the *Anemonies*, to whose Family indeed it belongs; from the Effect of good Culture varying its Colour through all the Changes of purple, violet and crimson, into fleshy white; and admitting even the Grace and Glory of accumulated Petals, in what we call the double Form.

'Tis in the single State we here speak of it; as the Flower shews itself in early Spring in our Gardens, altered in nothing from its native wild State, but that the good Soil makes the Petals larger.

Its common Name with us is the *Pasque Flower*.

Authors know it under the Title of *Pulsa-*

* Ray's Synopsis of British Plants, Ed. 3. p. 260.

tilla;

Feb. *tilla*; to which BAUHINE adds, as its farther Distinction, *folio crassore & majore flore*.

LINNÆUS, more correct than these early Writers, in his Characters does not admit this as a distinct Genus. Its essential Marks are the same with those of the *Anemone*, and he refers it to that kind; adding as the Distinction, *Pedunculo involucrato petalis rectis, foliis bipinnatis*: Bipinnate leaved *Anemone*, with a leafy Involucrum on the Top of the Stalk, and with strait Petals.

The Involucrum, serving as a Cup to the Flower, has been us'd as a Generical Distinction; and with the Addition of the Hairyness and Tails of the Seeds, constitutes the separate Character of *Pulsatilla*. LINNÆUS regards these only as Distinctions of the Species; and VAN ROYEN, DALIBARD, and others, follow him.

The Root is long and thick; black on the Surface, split into many Heads, and tufted on the Crown of each, with the fine Fibres of decay'd Leaves; bitter to the Taste, and acrid.

The Leaves are of a pale hoary green, and are supported on long weak Footstalks, naturally of a deep red toward the Ground, and paler upwards. Each Leaf is divided and subdivided in the pinnated Manner; and the Segments are small and narrow.

The Flower-stalks rise among these, two or more from every Head of the Root; so that when the Plant is carefully manag'd, it is not uncommon to see a Cluster of eight or ten bursting out in their full Glory together.

There are no Leaves upon this Stalk, except the Involucrum of the Flower, plac'd at its Top, be call'd by that Name.

Its Colour is purple at the Base, of a whitish green upwards; and it is hollow, light, and hairy. Three or four Inches is its natural Height when crown'd with the Flower; but when the Seeds are ripening it grows taller: this is the Provision of Nature for giving them to the Winds.

Each Flower is the Load of one of these Stalks; and notwithstanding their Thickness, it is more than they are able to support well erect.

The leafy Involucrum rises with a firm Substance from the Rind of the Stalk, and is divided into numerous very narrow and long Segments, which spread every way from this circular Base: these are of a whitish green, and covered with a thick grey hairy Down.

This shields the Base of the Flower, which rises in its hollow Bosom from the Summit of the Stalk, and is not less singular than beautiful.

Its Bigness is equal to that of the larger single Anemonies: its Colour a most elegant Violet purple, shining with a peculiar Smoothness and Delicacy on the Inside, while the whole outer Part or Back is hairy.

The Body of the Flower is compos'd of six Petals: three of these stand more inward than the others, and are of a deeper Tinge. The other three are a little more outward and paler. 'Tis not the Effect of Light and Shade, tho' correspondent with it, but the true Tinct of the

Flower. The Petals are oblong, broad, and pointed. Feb.

In the Centre of the Flower stand numerous short Filaments, crown'd with upright Buttons, which seem compos'd each of two well connected Parts.

In the Midst of this Tuft of Filaments appear the Rudiments of the Seeds. They are numerous, short, and collected into an oval Head, and they have pointed Styles terminated by obtuse Stigmata.

This is the Structure of the Flower of the *Pulsatilla*; from which the Student will determine as he thinks best of LINNÆUS, who has arranged it in the same Genus with the *Anemone*; and will see at once upon tracing these Filaments to the Base, that they arise from the Receptacle, and that the Plant is of the Polyandrous Tribe.

The Number of the Styles correspondent to that of the Rudiments of the Seeds, shews it also to be one of the *Polygynia*: the Seeds follow in a naked Head, and are hairy, and terminated by a Kind of Tails.

Culture of this PULSATILLA.

No Plant can be better adapted for the Gardener's obtaining Credit from its Culture than the *Pulsatilla*.

There can require no Care for keeping alive in cultivated Ground, an Herb that stands the bleak Air in our Fields, and lives and thrives upon the most barren Hills.

This is all the common Possessor of the Plant regards, and his Neglect leaves it in a poor Condition; but, under the Hand of Industry, conducted by well-founded Knowledge in Gardening, there may, with little Trouble, be rais'd from its Seeds, a thousand elegant Varieties: it will disclose as many Colours as the Peacock *Anemone*, and cluster its double Leaves as thick as the *Byzantine* Crowfoot.

Let the Soil be such as it is found to love best in its wild Nature, only a little more enrich'd; but let the Compost wherein it is rais'd from Seed be lighter.

For these two Purposes, mix first a good Quantity of light Pasture Mould, taken from a hilly but not barren Close, with about one fifth Part of old Cow-dung; and to a Load of this add two Bushels of soft Chalk.

Let these be well broke and mix'd together; and then expos'd to the Air in a Heap, turning them once in three Months all the Time the Seedlings are growing.

Nail up a Box of rough Boards, and fill it with some of this Compost, adding first to each Bushel half a Peck of Sand. Lay the Surface level in the Box, and keep out a small Quantity for covering the Seeds.

This is all the particular Care. The rest is but a Repetition of what we have directed in the preceding Article.

The

Feb. The Seeds must be saved from a fine strong Plant, and they should be laid three Weeks upon a papered Shelf to harden.

After this, they must be scattered over the Mould in the Box, and half a quarter of an Inch of the same Compost sifted over them.

The Heap of Compost must be formed into a Bed for the Reception of the Roots, when of a Size, to be ready for their first Flowering; and by this Management, the Gardener will see, instead of the simple violet *Pulsatilla*

Feb. of others, his new Bed decorated with vast Flowers, red, white, crimson and purple, doubled within, and fring'd at the Edges.

From the best of these he should save Seeds for his succeeding Sowing; and by a Succession of Care in this Kind, he may depend upon a Number of new Flowers; and these being raised from a Stock too much neglected by others, his Produce will have Novelty as well as Beauty.

5. The G A R D E N C O R N E L L.

Plate
XXII.
Fig. 5.

The Gardener who has taken up the Names of Trees from ignorant Custom, is to be told we write here of that he knows, by the Title of Cornelian Cherry.

Its large red Fruit has obtained it that Name, but the Resemblance is only such as could have affected the Ignorant, for the Fruits are altogether different in Structure.

'Tis only in common Acceptation it has this Name: no Author calls it *Cerasus*. It stands recorded in them all, under the Title *Cornus*, with the Addition of *mas* and *bortensis*.

The proper *English* of this Word is *Cornell*, and it obtained the first Epithet from Fancy, the latter, from its having a common Place in Gardens.

LINNAEUS more accurate in his Distinctions, calls it, *Cornus arborea umbellis involucrium æquantibus*. Tree Cornell, with Umbels equaling the Involucrium: they always at least do this, and when well manag'd, far exceed them.

The Tree grows to a moderate Height, and naturally spreads into a Multitude of irregular Branches.

These it is the Gardener's Business to restrain while young, and it will make a good Head, and whether in Flower or Fruit no inconsiderable Figure.

The Trunk is covered with a pale brown Bark, and the young Twigs are of a bloody Purple.

On these early in Spring appear the Flowers, before the Leaves burst forth, and they cover them at small Distances in agreeable Tufts, like Umbels.

Each of these is a Cluster of Twenty, or more Flowers, supported on a slender Stalk, and spread out handsomely.

The Flowers have also each its separate Footstalk; and at the Base of these, where they adhere to the Top of the main Stalk, stands the Involucrium, or general Cup.

This is composed of four oblong, broad, and somewhat oval Leaves, thin in their Sub-

stance, and in Colour naturally yellowish, but stain'd in various Degrees with Purple.

Two of these four Leaves are smaller, a Cup, and two larger, and the Pairs stand opposite. The Flowers themselves rise from the Hollow of this Cup, on very slender Footstalks.

Each has beside this general Involucrium, a Cup, and this is very small and divided by five Dents upon the Edge: this rests upon the Rudiment of the Fruit.

The Body of the Flower is formed of four oblong Petals; their Colour is naturally a faint yellow, but they are also sometimes ting'd with Purple.

After these are fallen, appear the Leaves, and the Fruit gradually ripens.

The Leaves are oblong, considerably broad, and undivided at the Edges, and ribb'd with high Veins.

The Fruit is oblong, and umbilicated; in Colour, naturally red; but sometimes yellow, and sometimes whitish.

When ripe, it is of a sub-acid and somewhat austere Taste, but not unpleasant.

To know the Class to which this Tree belongs, the Student must examine a Flower separately. He will find in it four Filaments and a single Style, and he will thence know it is one of the *tetrandria monogynia*.

Culture of the CORNELL.

It is a native of the warm Parts of *Europe*, and will grow freely in our Gardens. The best Way of propagating it is by Layers; these take Root readily, and in one Season will be fit to remove, and in a few Years more will bear Fruit.

The Colour and Singularity of this, are its greatest Recommendation; but some are fond of it in Tarts, the Sugar much improving its austere Flavour.

6. T R E E



Apennine Adonis



Judas Tree



Polyanthous Crocus



The Garden Cornel



Great flower'd Pulsatilla



Tree Honeysuckle

Feb.

Feb.

6. TREE HOUSELICK.

Plate
XXII.
Fig. 6.

This is a Plant very common in our Green-houses, and very well deserving its Place there, even if it never flower'd, for the Beauty and regular Disposition of its Leaves: but it flowers also in a Manner sufficiently singular.

Most of the Botanical Writers treat of it, naming it after CLUSIUS, *Sedum majus legitimum*; others *Sedum Arborescens*: and CASPAR BAUHINE by a Title that might mislead a young Botanist, *Sedum majus Arborescens flosculis candidis*; the Flowers indeed are yellow.

LINNÆUS, who has happily divided the old Genus *Sedum* into two principal Kinds, retains this Plant among the *Sempervivums*, ranking it with the common great Houfelic. He adds, for the Distinction of the Species, *Caule Arborecente lævi ramoso*: Tree *Sempervivum* with a smooth branched Stem.

The Root is thick and fibrous: the main Stem is of a pale brown, soft, and divided into many straggling and altogether irregular Branches.

The Leaves grow in very beautiful, regular and round Series at the Extremities of all the Branches;

they are oblong, shaped somewhat like a Tongue, and of a fine fresh green. They represent in some degree so many green Roses from their regular Growth.

The Flowers are inconsiderable in Size, but very numerous; they are of a pale yellow Colour, and of a starry Form, and they stand upon divided slender Branches.

Each Flower has its little Cup broke at the Edge into twelve Segments: the Petals which compose its Body are also twelve; oblong and pointed; the Filaments are twelve, naturally, but they sometimes much exceed that Number; and the Styles from the Rudiment of the Fruit are naturally of the same Account.

The Student will hence know the Plant to be one of the *Dodecandria Polyginia*.

Culture of this TREE HOUSELICK.

This is a Native of the Greek Islands, and with us a common Green-house Plant. The Cuttings grow freely, and it requires only the usual Care of others in the same Place.



C H A P. II.

The Management of the Flower-Garden.

LET our Gardener continue, throughout his whole Ground, the Care we have directed the preceding Weeks.

For Fear of Accidents among his Seedlings, let him sow this Week fresh Quantities.

The Polyanthus and the Auricula Seed will yet grow very well, and he may venture either upon a well chosen Spot of common Ground; managing the young Plants when they rise, as directed for the others.

For those Seeds which are sown upon the open Ground, we would advise only the lightest Covering of common Garden Mould: half a Straw's Breadth is sufficient; for if it covered to any Depth they shoot slowly, and the succeeding Heat kills the first Fibres.

Let the Coverings be yet kept in Readiness for sheltering the tenderest Flower Beds in cold Weather; but let them have Air and Sun, when any can be given them, for all their Beauty will depend upon it.

When the due Care is taken here, let the Gardener work upon his Borders in general. We directed him to have them clean and handsome at the Approach of Winter; but in the worst Seasons some Weeds will spring up: these

Nº 22.

must be now destroyed, and the Surface left clean for the succeeding Shoots.

It is very serviceable also to break the Top of the Mould to promote that welcome Growth; but this must be done with the greatest Care, lest the Shoots of those Plants which are most forward be broke by the Instruments.

No Person should be entrusted to hoe the Borders at this Season, but he who planted the Roots in them: he will know where they are, and how to spare them; and by his careful Operation, both Purposes will be answered at once, the Weeds destroyed, and the Surface broken.

When there is a new Gardener, who cannot know the Places of the Roots, let this hoeing be defer'd: let the Plants rise, tho' the Weeds rise with them, before any Attempt is made to destroy them; and then let them be cleared away by Hand.

As soon as the Ground is clean'd, and stirred at the Surface, let a small Quantity of very rich Mould be sifted over the Roots, and thus let them be left to make their Shoot.

Wherever Roses, Honeyuckles, or other such small flowering Shrubs as are used to have their Place in Borders, are wanting, let them be now

X x x

brought.

Feb. brought in. Great Care must be taken in planting them, or they will make but a poor Appearance in the succeeding Summer; but with due Management they will almost equal such as are of more standing.

The Ground must be opened to a due Depth, and a Quantity of well wrought Mould left under the Roots. The Hole must be considerably bigger than the Roots can fill; and when the Shrub is set upright, a firm Stake must be drove in near it, and the Opening filled in carefully with well broken Mould. The Stem is then to be tied up to the Stake, and too much Head must not be left.

A gentle Watering must be given as soon as the Shrub is planted; and repeated every other Morning: and the Ground round about the Stem must be covered with a little fine Hay, and two or three Bricks laid over it to keep it down. This will preserve the Mould from the Effect of Frost, and the Shrub will strike out its new Roots gradually and safely.

We last Week directed our Gardener to throw up some Dung in an Heap, for making hot Beds

for his annual Plants. If he have followed our Directions, about the Middle of this Week the Dung will be fit for Use.

Let the Bed be now made up; according to the Directions we gave for the Hot-bed in the Kitchen Garden: shaking out the longest of the Litter from among the Dung first; covering this all the Way up with such as is shorter, till the Top has only a Coat of pure Dung, with little or no Litter among it.

Let this all the Way be beat down and well levell'd: and by this Means it will be fit to receive the Mould in Time, and to bring the Plants forward so early, that they will not only come into Flower soon in Autumn, but will ripen their Seeds.

This is a great Article, for the succeeding Year's Bloom depends upon it; and nothing does so well for the securing Success in it, as this early Preparation of the Bed.

For the Particulars we refer to our last Number; and in the next we shall give the Method of sowing and raising the Plants upon it.



S E C T. II.

The Business of the SEMINARY, for this Week.

THE Season of sowing many flowering Plants in the open Ground is approaching, and the Borders should be now prepared to receive them.

Let two or three Pieces in different Parts of the Seminary be dug up, and the Mould well broken and thrown in Ridges, East and West, to receive the Benefit of the Air.

While the Soil is mellowing here, let another Piece be dug up for the immediate Reception of Layers of several hardy Trees. Such as were not rooted sufficiently at Autumn, may be taken off now; for even in Winter they make some Shoots, and they should be planted, with the same Care

we directed for the flowering Shrubs; at about two Foot Distance.

Here they are to stand three, four or more Years, according to their Nature, to be well furnished with Roots, and of a due Height for bringing into the Places where they are to remain.

Sow the Seeds and Fruits of many of the hardy Shrubs this Week. Let the Earth be well broke to receive them, and let them be carefully covered. Throw some Pieces of Furze Bush over the Ground when they are in; and bait four or more Traps for Mice, placing them all about the Spot.

Feb.

Feb.

S E C T. III.

POMONA, or the FRUIT-GARDEN.

LET the Gardener look over those Stocks he has budded the preceding Summer. If he have cut off the Heads of them already, let him see that the Sap from the Wound do not run upon the Bud.

Those which have not been cut off before, he must cut now; and as this is the principal Danger, let it be guarded against in the Manner of cutting. The proper Place is a full Hand's Breadth above the Bud, and the Cut should be made sloping backwards, to prevent the Sap from getting at the Bud.

Let the Gardener now go over the Espaliers he repair'd according to our preceding Directions; and see whether every thing keep firm. Wherever a Bough is loose, this is the Time to fasten it, for after this Week the Buds will be coming forward, and nothing can be done afterwards without injuring the Trees.

Let great Care be taken of the Strawberry Pots, that are planted in the Hot-bed for an early Crop; they will be now full of Bloom, and without due Care this is all they will shew. The great Danger of this Plant is at the Time of setting the Fruit.

Every Day the Plants must be water'd; and about Noon, when the Weather will any way permit, Air must be freely let in to them. When the Days are less favourable, the Glasses should still be raised for a little Time, at the best Hours, and a Cloth hung down from them to cover the Opening: this, though it keeps off

the Force of the Cold, will yet admit some Air.

Without a due Attention at this Time, all the former Care will be thrown away; and a fine Shew of Blossoms not produce a Handful of Fruit.

Take Care to open the Fig-Trees, which have been shelter'd according to our Directions in the Middle of every tolerable Day. They must soon be left open entirely, and as they are made tender, by the Defence they have had during the Winter, if they be not carefully hardened now, they will be destroy'd.

Let a Piece of Ground be dug in a secure and well defended Place, for the sowing the Stones of Plums and other hardy Fruit; for raising Stocks for the future Service of Budding and Grafting: a Provision of the same Kind we have directed also to be made in the Seminary; and the Intent in sowing them in this Place is to be secure of so needful an Article as a Supply.

They are liable to various Accidents; and even the Destruction by Vermin, is alone a sufficient Occasion for this Caution; that if they from any Accident fail in one Place, they may be had from the other.

They will take up little Room, wherever they are sowed, and they are no Blemish if seen; therefore, never let a Year pass, without sowing a small Quantity of the proper Kinds; for it is better to destroy them Twenty Years, than want them one.

S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

DIG up a fresh Piece of Ground for Beans and another for Pease. These Sowings should be very frequent; there is but a short Time for each of the Plants, from their beginning to bear for gathering, and their being too old for Delicacy.

'Tis therefore the careful Gardener should repeat these Sowings, that as one Crop goes off, another may just come into bearing.

Let him proportion the Quantity to the Demand; and there will be no Waste either of Labour or its Products.

He knows what Piece of Ground he should

sow for a Spring-Crop: and all we direct is, that he would do it at several Times, not all at once.

Let him chuse also the proper Kinds for these several Occasions. The smaller Beans and Pease are the only Sorts to be trusted in the earlier Sowings, but the Windsor-Bean is the best Kind for this and the last; and the Morotta and other large Pease.

Prepare a common Hot-bed for Kidney-Beans, and cover it well with Mould, three Inches thicker than in the common Way; and when the Heat is moderate, plant the Dwarf white

Feb. white Kind; this will not run into Stalk, but bears excellently at a small Height.

All possible Care must be taken to give these Plants Air as they come up, or the Beans will be ill tasted; they must also be moderately watered at Times.

Chuse a warm Piece of the Ground, where the Mould is rich, and add to that Quality, by scattering over it a good Quantity of Dung from an old Hot-bed: dig this well in; break the Mould perfectly; and upon this sow some Celeri Seed.

The Piece should not be large that is sown with it at this Time; but it is a very essential Crop: it comes in at a fine Season; and tho' it will not continue long in Order, yet while it does, nothing is superior to it.

What we have directed to be done with Respect of Beans and Pease, must also be observed in the Cucumber Crops.

Accidents are very apt to befall the young Plants; and the Gardener who acts upon our Principles of Security, must be provided with fresh Quantities to supply their Places.

For that Purpose, let him, toward the End of this Week, sow a little fresh Seed; and repeat the same, from this Time, once in ten Days. The Plants will be ready for the Purpose we have nam'd, if they should be wanted; if not, they will be preserv'd growing with a very little Trouble for successive Crops.

The Care necessary to be taken of those in the growing Condition, must be continued strictly according to our preceding Directions. See that they keep cover'd with Mould very nearly up to the Leaves; and wherever it has fallen away, carefully draw up some fresh.

Keep up a good growing Heat in the Bed, and let there be Water always ready warm'd in it, to give them in small Quantities as they have Occasion.

In the Middle of the Day admit a little Air; shelter them carefully at Night; and frequently turn and wipe the Glasses.

Dig up a good Piece of Ground for Carrots and Parsnips, turn it up two Spades Depth, and break it well: it will greatly assist this Crop to dig in a good Quantity of old and thoroughly rotted Dung mix'd with Sand, and to blend them very carefully together.

Nothing but very old Dung will do for this; for if such as is newer should be used, the Carrots will be ill-tasted and Worm-eaten. Feb.

Such as comes from an old Hot-Bed, and is perfectly decay'd, is best; and with this Assistance the Carrots will not fail to grow with a strong, single, and strait Root, without splitting or shooting sideways; and they will be tender and well tasted.

More depends upon this Management than would easily be thought: there is no other Way to bring this excellent Root to its full Perfection.

In Gardens, as commonly manag'd, Carrots are rank, tho' tender; and in Fields they are sweet, but apt to be hard: this Management is the only Method of bringing them to have the Advantages of both these Cultures, without the Disadvantages of either. They will thus have the Sweetness of the Field, and the Tenderness of the Garden Carrot.

Let the Surface of this Piece of Ground be levelled; then mix with the Seeds a good Quantity of Sand; and chusing a calm Day, scatter them as equally as possible over the Ground. This Care will prevent their rising in the usual irregular Manner in Clusters in some Places, with great Vacancies between.

When all the Seed is on, tread over the Ground, and then rake it in. Observe when they come up; for the Weeds will rise with them.

As soon as they have a little Strength, let them be thin'd and clear'd from the Weeds that are among them.

In small Pieces of Ground this is best done by Hand, because the worst Plants can be so taken up, and the best left: in larger Quantities the Hoe is commonly us'd.

Which ever be the Method, the Plants should be left at about five Inches Distance.

This will answer very well for those which are intended to be taken up young; but if they are for growing to the full Size, they must, about three Weeks after, be clear'd of Weeds again, and then thin'd to the Distance of eight or nine Inches.

After this, the Ground being kept clear from Weeds, they will make their own Way to Perfection; and will not fail to have their full fine Flavour.

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R XXIII.

For the second Week in *FEBRUARY*.

S E C T I O N I.

FLORA, or the P L E A S U R E - G A R D E N,

C H A P. I.

Flowers and curious Plants now in their Perfection.

I. GREAT FLOWERED SNOW DROP.

Feb.
Plate
XXIII.
Fig. 1.

WE in this, as in former Instances, call Plants familiarly known by their common Names; informing the Student before we proceed to the Description, what is the more proper Title.

In our eighteenth Number, treating of that earlier Flower the common Snow Drop, we observ'd that several others of a different Genus, were join'd to it by the common *English* Name.

The Plants we mention here, and under the succeeding Head, are the two principal: they are called as that Snow Drop, and bulbous Violet; but from the different Characters in their Flowers, LINNÆUS has arrang'd them under distinct Genera; and naming the first *Galanthus*, calls these *Leucoiums*.

The earlier Writers were well acquainted with this Species. C. BAUHINE calls it *Leucium Bulbosum vulgare*. LINNÆUS continuing the Name *Leucium*, adds, as the Distinction of the Species, *Spatha uniflora stylo Clavato*, single flower'd *Leucium* with a clavated Style.

The Root is a large bulb, white within, covered with a brown outer Rind, and sending Fibres from the Base; its Juice is slimy, and disagreeable to the Taste.

The Leaves rise six or eight from each Root, Numb. XXIII.

envelop'd with a whitish Film at their Bottoms, and they are long, moderately broad, obtuse at the End, and of a very fine green. Feb.

The Stalks rise to ten Inches in Height; they are of a paler green than the Leaves, and somewhat edg'd; two or three rise from each good Root, but each is terminated by a single Flower. This is at first wrap'd in a Scabbard, which serves it as a kind of Cup; and is thin and whitish in the Middle, and thicker and green at the Edges,

When this bursts appears the Flower, large, and drooping, from the Slenderness of its Footstalk. The Colour is Snow white throughout, except at the Tips of the Petals, where there is on each a Spot of very beautiful green,

The Flower is follow'd by a roundish Seed Vessel, mark'd with three Furrows, and containing in three distinct Cells numerous round Seeds.

To know its Class let the Student examine the Flower distinctly. He will perceive its Scabbard bursts at the Side to give it Passage, and then after a little Time begins to wither: it has no other Cup. It is compos'd of six broad Petals, which unite at their Bases, and have pointed Ends, the whole standing in a roundish Manner, and representing a Bell.

Y y y

In

Feb. In the Hollow of this Flower are placed six short Filaments, crown'd with oblong quadrangular Buttons; and in the Midst of them a single Style, small at the Bottom, and thicker upwards: This is the Shape express'd by the Term clavated, and it is terminated by a long fine Stigma.

The six Filaments and single Style shew the Plant to be one of the *Hexandria Monogynia* of LINNÆUS; the sixth Class of that Author, and its first Section.

Culture of the GREAT FLOWERED SNOW DROP.

The Plant is a Native of the Swiss Meadows, and thrives best where it has some Moisture, and not too much Sun; this shews its proper Culture. No Defence is needed for it against our Winters: it may be planted in the open Ground, and its best Soil will be pure Meadow Earth.

Let the common Mould of a Border be dug out, and its Place supply'd with good black Earth from under the Turf in a fertile Meadow; and let this Border be situated in an open Part of the Garden, facing the East, that the Plant may have the Morning Sun, and no more.

Let this Border be stocked with Off-sets from some old Roots, and let them be planted in the Beginning of *September* two Inches and a half deep; and at ten Inches Distance.

This is the Method of first stocking a Garden; but let there be also a Supply from Seed. For this Purpose let the Seeds of the best Flowers be saved with Care, and in the latter End of *August* let them be sown upon the two Ends of the same Border where the Off-sets are placed. They should be scatter'd at two Inches Distance, and covered a Straws-breadth with Mould.

Here they will rise without any farther Care than a little watering in dry Weather; and being kept clear from Weeds: and thus there will be a rising Supply while the first planted Sets are

Feb. flowering. There is nothing amiss in the Appearance of the Seedlings, and as this Soil and Aspect in which we have directed for the others, will best raise these; so there is no Occasion for a separate Trouble.

These Seedlings will, according to the Favourableness of the Soil, Situation, and other Accidents, flower the third Year, or a Season sooner or later. There will be some Varieties among them, and some Luxuriances. I have seen two or three Flowers upon one Stalk, as *Clusius*, tho' scarce credited, describes them: the Student will hence see that *Spatha uniflora*, tho' a general, is not an unalterable Character.

The Number of Petals will also be encreased to eight or ten on some Plants, and in others they will be truly double. This is the Advantage of raising Flowers from Seed; and in all Kinds it perfectly answers the Trouble.

These Seedlings when they have once flower'd, are to be treated with Care according to their Value. The best Kinds are to be planted at the Depth and Distance we have directed for the Off-sets: and all the Care that is afterwards required for them is to keep the Ground clear from Weeds; and annually to take up the Roots when the Leaves are decay'd, which will be in the Beginning of *June*, and keep them in Paper Bags in an airy Place till *September*: then planting them again in a Border in the same Situation, but with fresh Mould.

The same Border may serve many Years, but fresh Earth should be brought in for every Plantation. This will keep the Plants in Vigour, and they will much exceed the Thought of such as have not seen them treated with such Care.

After this some Roots are to be left for Off-sets, not taken out of the Ground as the others; and each Year the finest Flowers should be marked for Seed. This Way every Season will improve the Plants: and it is no small Praise to the Gardener to raise the most slight to Excellence.

2. MANY FLOWERED SNOW DROP.

Plate
XXIII.
Fig. 2.

We adopt in this Case, as in the former, the common Name, for the Gardener's first Information of what Plant we mean; but are to tell him this is as improperly as the preceding, ranked under one Name with the common little Snow Drop; being of the distinct Genus *Leucoium*.

The Writers on Botany, in general, have been acquainted with the Plant, and C. BAUHINE has named it, *Leucoium bulbosum majus sive multiflorum*.

LINNÆUS has done this Author honour, by adopting his Character of the Plant, tho' he expresses it in the more modern Terms. He calls this *Leucoium Spatha multiflora*, *Stylis filiformi*, many flower'd Leucoium, with a Thread-like Style.

Our Reader remembers what we have just said

of the Style of the other, and will thence see the Strength of this Distinction.

We have placed it next the preceding, to give the Student in this pleasing Science, a just Idea of their Difference, which does not consist alone in the Number of the Flowers, but in their Size and Disposition.

The Root is large and round, and is cover'd with a whitish Membrane. The Leaves are long, and of considerable Breadth, sharp pointed, and of a fine deep green, with a slight Tinge of blueish.

The Stalk is thick, naked, hollow; of the same Colour with the Leaves, but paler; and at its Top appears at first a swollen Head; a Scabbard containing the Flowers.

This

Feb. This bursting on the inner Side they throw themselves out three or four from each Head. They have long and very slender Foot-stalks, and their Weight being too much for these tender Supports to carry erect, hangs them drooping. They are form'd like little Bells; and in Colour are of a perfect snowy white.

Each is composed of six broad Petals, which unite at the Base; and within these stand as in the other, six Filaments and a single Style, but

this is slender, and not clavated as in that.

Feb.

This Plant, as a Species of the same Genus, evidently belongs to the same Class with the last, the *Hexandria Monogynia*; and being a Native of the same Parts of Europe, and found in the same kind of Soil and Situation, nothing particular is required in its Culture.

The same Directions we have given for the last stand good for this, and it will so be raised to the same Perfection.

3. GIANT ASCLEPIAS.

Plate
XXIII.
Fig. 3.

This is a Plant long known to the botanical Students, and as long celebrated for its Singularity and Beauty.

Most Authors rank it among the *Apocynums*; but LINNÆUS, who has very accurately establish'd the Distinctions between the *Apocynum* and *Asclepias*, refers it to the latter of those Genera.

PLUKENET, and the Generality of those who have follow'd him, call it *Apocynum erectum majus latifolium indicum*.

LINNÆUS referring it to the *Asclepias*, adds, as the Distinction of the Species, *foliis amplexicaulibus oblongo ovatis: Asclepias*, with oblong oval Leaves embracing the Stalk. The common Name by which our Gardeners know it is, *Beidel offar*.

ALPINUS describes it under this Title among his *Ægyptian* Plants; and the Strangeness of the Sound has implanted it on vulgar Memories; while those Names which have known and distinctive Meanings, if understood, are soon forgotten.

The Root spreads under the Surface, and has innumerable Fibres. The Stalk is firm, tough, upright, and seven Foot high: its Substance woody, and its Colour brown toward the Bottom; and upwards purplish, ting'd with green.

The Leaves are large. Their Shape is oblong, with a Tendency to oval, and they have an obtuse Point. Two stand at each Joint; and having no Foot-stalks, their broad Bases close about the Stalk: their Colour is a fine green on the upper Side, and paler underneath; and their Ribs which are very high and conspicuous, are naturally of a whitish green, but often ting'd with purple.

The Flowers spread from the Extremities of the Stalks into a kind of Umbells; and are extremely singular and elegant. They are of a pale red towards the Ends of the Petals, and whitish, with a Tinge of green at their Base, but in the Middle of the Flower the Colour is a very lively red.

This Variation in the Colour of every Flower, their Elegance single, and the full Beauty of the regular Cluster of them, stamp upon the Plant a Character of Elegance none should neglect who are at the Expence of raising Exoticks.

After each Flower there come two Pods, large, swollen, and of a lively green, ting'd variously

with purple: but from the largest Cluster of Flowers few of these are produced; for the Generality are abortive.

This is the general Figure of the Plant, but its Flowers demand a more strict Attention; for few are more singular.

Each Flower has its separate Cup. This is very small, form'd of a single Piece, and nick'd in five Parts at the Rim.

The Body of the Flower is form'd of a single Petal divided deeply into five Segments: these are large, and of an oval Form, but pointed at the Tip, and they naturally bend a little; these have the light red Tinge we mention'd. In the outer Part of the Flower, and the united Part at the Bottom is whitish and greenish.

In the Midst of the Flower stand five Nectaria or Glandules, with a kind of solid Plates or Scales rising from them; these converge, and they are of the fine high and gaudy red which we have describ'd in the central Part of the Flower. These solid Plates arising from the Glandules are altogether singular.

The Glandules themselves are found in the Flowers of all the *Asclepias* kind; but in the others they are auriculated outward, and have a kind of Horn turning its Point inward. The Plates in this Flower give it an Aspect unlike not only to the others of its Kind, but to every Thing in Nature.

In the Centre stand five Filaments, so short, that they would not be perceiv'd but for their Buttons, which are large and oblong: these are fix'd to a short truncated Body, splitting at the Sides in five Parts.

The Styles are two, and they, like the Filaments, are so short, that but for their Stigmata or Tops they would scarce be distinguishable.

The extreme Singularity of this Flower, which would perplex any one not led by the true Path into this Science, will only surprize and please our Student. While he admires these peculiar Parts and Forms, he will see very obviously that the five Buttons refer it to the fifth Class in the LINNÆAN System, and that the two Styles place it in the second Distinction under that Class, the *Digynia*.

Culture

Feb.

Culture of this ASCLEPIAS.

It is a Native of the *East*; and of the warmest Parts of *South America*; and with us requires the Heat of a Stove to bring it to any Degree of Perfection.

The Method of propagating it is by Seeds; and the great Care should be to obtain these fresh and in their Pods; for otherwise they usually fail.

Early in Spring let a Couple of Garden-Pots be fill'd with some light rich Earth, from an improv'd Part of the Garden; and upon the Surface of this scatter the Seeds at equal Distances: sift over them about half a quarter of an Inch of the same Mould; and then set the Pots up to their Rim in a Bark Hot-Bed.

Once in three Days give them a gentle Watering, with Water that has stood in the Stove twelve Hours; and every now and then open the Glasses for a little Time to give some Air.

Thus they will shoot; and sooner or later, according to the Newness or Age of the Seeds, the Gardener will see his young Plants.

These he must watch carefully. Once in two Days giving them a very gentle Watering;

and, when the Sun is hottest upon the Place, allowing them a little Air.

When they have thus arriv'd at some little Height, let there be as many small Pots provided as there are Plants: let these be fill'd with good Garden-Mould, and set in the Bed for three Days, that the Earth may be of the same Degree of Heat with that in which they are growing.

Then let them be carefully taken up, and one planted in the Middle of each of these Pots.

When fix'd in the Mould, let them have a gentle Watering, with Water which has stood to be warm'd in the Stove; and let them be all set up to the Rim in the Bark. Let the Glasses be shaded with Mats; and little Air admitted till they have taken Root.

After this they will grow fast: let them, when they are increas'd in Size, be shifted into larger Pots; and when they are so tall as to reach the Glasses of the Frame, let them be taken into the Stove, and set in the Bark-Bed there.

After this they will require nothing but the common Management of Stove-Plants; and they will rise to their full Perfection, and produce their singular and elegant Flowers in great Abundance.

4. A M E T H Y S T I N E H Y A C I N T H.

Plate XXIII. Fig. 4. The Beauty of this Species of Hyacinth depends so much upon its Culture, that nothing is a greater Credit to the Gardener than to see it in the full Glory.

It will live freely enough in any Garden, and flower annually with little Care; but in these Cases the Flowers are of a faint blue, or a dusky white: either Way of very little Beauty. In better Management it rises earlier; the Stalk is stronger, and the Flowers are amethystine.

Most of the earlier Botanists have known the Plant; but they have treated of it indistinctly: dividing it, under its different Appearances, into more than one imaginary Species, and confounding it in Name with others.

RUDBECK calls it *Hyacinthus oblongo cæruleo flore minor*. A Name copy'd by the BAUHINES, and from them by others.

LINNÆUS, whose specific Names are too accurate for Confusion, calls it *Hyacinthus corollis campanulatis semisexifidis basi cylindricis*: Campanulated *Hyacinth*, with the Flowers cylindric at the Base, and lightly divided at the Edge into six Segments.

The Root is bulbous and oblong, covered with a brown Membrane, full of a slimy Juice, and hung at the Bottom with many Fibres.

The Leaves are long, not very broad, pointed at the End, and of a deep green.

The Stalk is round, upright, naked, and a Foot high, purplish toward the Ground, and of a pale green upwards.

The Flowers cover a third Part of its Length, in a kind of Spike. They have weak Foot-stalks, on which they hang drooping; and they are large and very beautiful.

In their most natural State they are of a deep violet blue, with a light Tinge of purple: in Gardens, where they are not much regarded, they lose this fine Tinct, and become blue, greyish, or white: without Lustre in either Colour. But when the Gardener allows them a due Attention, they recover the purple of their ancient Tinct, with a fainter Mixture of the blue, and have the Colour of the finest Amethyst.

The Flower has no Cup, but hangs naked from its Footstalk: it is form'd of a single Petal, cylindric and hollow at the Base; and at the Rim divided into six Segments, which turn outwards.

The Seed-vessel which follows, is of a roundish Form, but marked with three Furrows, and it contains a few Seeds of a roundish Shape in three separate Cells.

Thus far the Eye of common Curiosity discovers; but the Student, in our Road of Science, examines farther; tearing open a Flower, he finds within its Hollow six Filaments, whose Buttons converge toward one another, and in their Midst a single Style crown'd with an obtuse Top.

This shews him that the Hyacinth is one of the *Hexandria Monogynia*, the sixth Class and its first Section.

Culture



Great flower'd
Snowdrop

Many flower'd Snowdrop

Giant Asclepias

Melchystine Hyacinth

Double
Golden Crocus

Single Golden Crocus

Double Blue Hepatica
Royce wood.

Feb.

Culture of this HYACINTH.

We have observ'd already, that to give this Plant its perfect Beauty, more Care is necessary than is usually bestow'd upon it; but even this is not much.

It is a Native of the warmer Parts of *Europe*, and is found principally in loose rich Soils, by the Sides of Woods, where it has Shade and Shelter.

This should be our Direction for raising it; and upon this Plan alone the Stalk can be brought to its true Strength and Height, and the Flowers to their full Number and Beauty.

The Plant must be rais'd from Seeds, in order to attain its true Character of Excellence; for Off-sets, with the best Management, will only be made more strong than their old Roots, but will never attain a better Colour.

Let not the Gardener be disheartened at our naming the raising it from Seed: we shall not tax him so highly as for the Oriental Kinds: he needs only sow it upon a well prepar'd Border, and keep the Plants clear from Weeds: this is but little Trouble; and the rest is Patience.

Let him procure Seeds if he can from *Italy* or *Spain*; if not, let him save with due Care what are ripen'd from the Plants in our own Gardens.

Let these be spread upon a paper'd Shelf to harden, and then ty'd up in a Bag till *August*.

Let him chuse a warm and shelter'd Part of the Garden, and there dig out the Mould from a Border.

Let him make, for the filling up its Place, the following Compost:

Feb. One Load of Mould from under the Turf in a rich Pasture; half a Load of Pond-Mud, and a quarter of a Load of Earth from under an old Wood-Pile. Let these be mix'd and screen'd together, and the Whole thrown into the Bed.

Let the Surface be levell'd; and let it lie a Week to settle: then rake it again, and scatter over the whole Surface the Seeds. Sift upon them a quarter of an Inch of the same Mould, and give a gentle Watering.

In the succeeding Winter draw a Mat upon Hoops over the Bed, in the severest Weather; and in Spring the Plants will appear.

Let them be thin'd where they rise too close; and after this nothing need be done but keeping them clear from Weeds in Summer; and at Autumn sifting over the whole Surface a little fresh Mould.

When they flower there will be a great Difference in the various Plants; let the meaner Kinds be remov'd into other Places, and the best left at a proper Distance. They will flower with their full Strength, and need not be at any Time taken out of the Ground, except once in three Years, to take off the Off-sets.

This Method of letting them flower where they rise from Seed, is the great Secret in their Culture; and this makes it necessary to sow them in the Border, where they are to remain; not in Boxes, nor in the Nursery.

Let not the practical Reader carry this Method farther than we mean: it suits this and the other Hyacinths of *European* Origin; but another Method must be used with the Oriental: of these we shall treat in a succeeding Number; and deliver the Management of them at large.

5. *Single and Double* GOLDEN CROCUS.

Plate
XXIII.
Fig. 5.

We have observ'd before, that most of the Crocus's of our Gardeners, however dignify'd by peculiar Names, and distinguish'd as separate Species, are no more than Varieties, owing to the Force of Culture.

This which we treat of here, whether in the single or double State, is nothing more than a Variety of the common Spring Crocus: but, allowing this, we may recommend it to the Attention of the Curious in Flowers; tho' the Botanist will find in it nothing new with Regard to Science.

The Root is roundish, covered with a brown Bark, and furnished at the Base with many Fibres.

The Leaves are numerous and very narrow; they have considerable Length; they terminate in a Point; and they rise, together with the Stalks, surrounded by a fine pale Membrane.

Their Colour is a lively but not very deep green; and they have a faint white Rib along the Middle.

N^o 23.

The Flowers are large and beautiful; they rise from the Root with a long Tube, surrounded with a thin and ragged Membrane; and they are of a most beautiful gold yellow: the Division, as in the other Crocus's, is into six long and large Segments, resembling so many Petals; and of these three stand more outward than the others.

The three outer Segments have each a Rib of Purple running all their Length, deeper toward the Bottom, and paler upwards; and the inner Segments have the Tips purple. Within the Flower stand three Filaments of a yellow Colour, and tip'd with golden Buttons; and in the Midst of these a single Style.

The Scabbard or Film surrounding the lower Part of the Tube of the Flower, is form'd of a single Piece; and from the Body of the Flower there run down this tubular Part six Lines of Purple, continu'd from those which run along the Segments.

This is the Condition of the Flower in its common single Appearance; but when the Gardener's

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Feb. dener's Art has render'd it double, the Beauty is incomparably greater.

The Segments become numerous, and their Colour a yet brighter yellow than in the single Flower. The Bottoms of the Segments often swell out into a kind of arched or rounded Buttons; and these are throughout, except for a yellow line along each Edge, of a deep purple.

The Veins of purple run along the Segments in greater Number; two, three, or more, on each; and sending of Side-Branches at small Distances, these intermingle among one another, and give the whole Flower the Aspect of a Brocade, whose Ground was gold, and the Flowers purple-velvet.

This is a Condition in which the Crocus makes its most gorgeous Appearance. It has been honour'd under it with the Name of *Crocus flore flavo vario multiplici*. But LINNÆUS, whom no Forms of Chance misguide, reduces it to the Condition of a Variety only of the common Crocus; which

he calls, *Crocus spatba univalvi radicali, corollæ tubo longissimo*: Crocus, with the Tube of the Flower very long, and the Scabbard rising from the Root in a single Piece.

This comprehends all the Varieties which we see cover the Border of our Gardens.

Culture of this CROCUS.

This, as a Creature of the Gardener's Art, should be kept up with all his Care: it will produce Off-sets in Abundance; but, if they have not a fresh Soil every Year, they will decline in Lustre. The best Method of all is to raise the Plant from Seeds.

The Method we have describ'd already in treating of the Polyanthous Crocus; and shall only add here, that this Kind requires a somewhat richer Soil: the mixing Cow-dung with the Mould is the best Method; for that fertilizes without heating.

6. DOUBLE BLUE HEPATICA.

Plate
XXIII.
Fig. 6.

The *Hepatica*, common in every Garden, and diversify'd by the Singleness and Doubleness of the Flower, and by its various Tinges of blue and red, or by its simple Whiteness, is, under all these Appearances, but one Species.

It is a Plant extremely singular in its Kind, that needs nothing but to have been more scarce to have been esteem'd extremely. In its natural State it fringes the Sides of the Swiss Woods, and hangs from the rude German Rocks, with single blue Flowers.

Accidents in its wild Growth sometimes tinge these with red; and where the Nourishment is scanty they will be white; but the Species is throughout the same; as well as in that Multiplicity of Petals, and those stronger Colours we see it wear in Gardens.

All the old Writers name it; and its common Title is *Hepatica*, or *Hepatica nobilis*. Our English Herbalists have translated these Names into Liverwort, and Noble Liverwort; but the Gardener still preserves the Latin Term *Hepatica*.

LINNÆUS has cancell'd even that; and, by a Boldness, perhaps too great, has join'd this Plant with the Anemonies: he calls it *Anemone foliis trilobis integerrimis*: Anemone with three-parted Leaves, the Lobes undivided at the Edges.

The red double Flower is valu'd by many for its Beauty; and the white; about whose Existence, some, who have had the Reputation of Experience, have disputed, for its Singularity; but it is doubtless in the deep blue double State that the Plant glows in its full Lustre: we have therefore represented it in that Condition in the annexed Figure.

The Root is large; and when it has stood some Time divides into many Heads. It is covered in every Part with innumerable Fibres, moderately

thick, and of a reddish black, variously intangled with one another,

The first Production is the Flowers; these rise two or more from every Head of the Root; so that from a Plant of considerable standing, it is not strange to see forty, fifty, or more, in a Cluster; all rising from one principal Root.

These stand singly upon slender and weak Footstalks, four Inches in Height, and of a pale green, usually ting'd more or less with red.

The Flower which crowns each Stalk is large, and of a fine Sky-blue, crowded with oblong undulated Petals; and in the Midst decorated with a small Tuft of Buttons plac'd upon numerous Filaments.

The Seeds follow, in the single Flowers, naked, and cluster'd together in an oval Head: some also are ripen'd after the semi-double Flowers; but, from the perfect double rarely any.

The Student, examining this Flower with the Eye of Science, will find it plac'd in a green Cup, form'd of three Leaves. This will a little startle him in an Anemone, the first Article of whose Character is *Calix nullus*: but he must be inform'd, LINNÆUS accounts this Cup as a leafy Involucrum, tho' less remote from the Flower than that of the *Pulsatilla*.

These Niceties he may determine at his Pleasure: within this Cup, for so Nature compels us to call it, rise six or more Petals; these are plac'd in two or more Series, and they are oblong and obtusely pointed. In the Centre appear numerous short Filaments, crown'd with a kind of double Buttons; and deep amongst these are bury'd the Rudiments of many short Seeds, collected together into a roundish Head.

The Student knows that where the Stamina are
nume-

Feb.

Feb. numerous and free, the Class to which the Plant is to be refer'd, is found by their Infertion: he will therefore trace these to the Bases: he will find them inserted into the Receptacle; and will thence learn that the Plant is one of the *Polyandria*: the numerous Rudiment of Seeds, each crown'd with its little Style, shew also that it is one of the *Polyginia*, and he thus knows it is one of the last Section under the thirteenth Class of LINNÆUS, comprehending the Anemonies, Ranunculus's, and the like Plants.

Culture of the HEPATICA.

The Gardener will perhaps smile to see us treat the Culture of this common Plant with Ceremony, supposing no Care needful to its Preservation: indeed it stands all Seasons; and any Soil supports it: but we shall acquaint him with a Method by which he shall have Flowers of twice the common Bigness; and of a much superior Colour.

These are to be obtain'd by sowing the Seeds of the best Kinds that produce them; and from such sowing there will rise all the Varieties of Form and Colour that are seen in our Gardens: this shews they are only Varieties as we have established already.

Soon after the Flowers open, the Leaves of the Plant thrust up their Heads, crumpled and hairy; and by degrees they unfold themselves, and become smoother, broad, and divided deeply, but not to the Rib, into three Lobes.

We name them in this Place because upon their Colour is to be founded a Judgment of the Seeds, which are supported by the same Root. The natural Colour of the Leaf is a deep green, but it is often spotted and stain'd with purple. This grows deeper towards the Time of the Seeds ripening, and the more purple there is in the Leaf, the better Expectation there is to have strong colour'd Flowers. This is not commonly known, but Experience supports it invariably.

Therefore let the Gardener mark the largest and finest of his single, and some double Flowers for Seed; and when that is growing toward Ripeness, let him observe the Leaves. Those Heads which follow semi-double Flowers, and are accompany'd with the deepest purpled Leaves are finest.

Let him cut off these in the Head, and lay them on a paper'd Shelf. When they begin to fall off let him separate them entirely, and spread them out again: after eight or ten Days airing, when they lie loose, let him tie them up in Bags for sowing.

In the Beginning of *August*, dig up a Border in a Part of the Garden, open to the Morning Sun, but shelter'd from the full Blaze of Noon. Take out half the Mould; and mix with the rest as much fresh Earth from under the Turf in a rich up-land Pasture. Break this very well together, rake the Surface level, and scatter on the Seeds.

Sift over them a Quarter of an Inch of the same Mould; and leave them thus to Nature. Feb.

In Spring the young Plants will appear, and the Weeds which rise with them must be carefully taken up by hand. Let them then have a gentle watering twice a Week in dry Weather; and from time to time clear away the Weeds.

In the Beginning of *August* mark the best Plants, and thin them to about eight Inches Distance. Let those weaker ones which were taken up be planted in other Parts of the Garden, but let the others never be removed out of their Place.

Keep the Ground clear of Weeds continually, and in dry Seasons give gentle Waterings.

The next Spring some of them will flower, and the succeeding Season all the Remainder. The Gardener will see in their first Bloom the Promise of a great deal of Beauty, but it will be two Years more before they arrive at their Perfection.

He will then find among them all the Varieties, and many more than those we have mentioned, or others described. There will be large single Flowers, valuable for their Colour and Expansion, semi-double for Seed; and the most perfect double ones: and these in all the Kinds of Colour, from white through all the Shades of blue, from pearl Colour to the deep Azure of a Summer Sky, and from the same white through all the Degrees of red, from the Peach Bloom to crimson, and to purple. The red and blue will be mix'd in some, and in these he will trace the purple from that of the Violet to the palest Hesperis.

White will be the least common Colour, and indeed a perfect white untinctured with the blue or red, very rare; but he who shall take this Course, will not afterwards fancy there is no such Flower.

From this Time of their coming to their full Glory, there will every Year be more and more numerous Flowers from each Root. All the Care they require is to be kept clear from Weeds; to have the Surface of the Mould stir'd about them often, and every Autumn to half an Inch of fresh Pasture Mould sifted over them: taking away the old Surface in its Place. This must be done with great Care not to wound the Roots, and thus the Return of every Spring will cover the Ground with Flowers exceeding all the Ideas we can raise of their Beauty by Words.

We promise that the Flowers raised by this Management, shall greatly exceed those of any other Culture; and perhaps the Reader will ask, Whence is derived that great Advantage? the Success of Things depends often on Articles so seemingly trivial, that they are overlook'd.

The great Benefit of our Method above others is, that the Plants are never removed. Where the Seed makes its first Shoot, the Plant continues

Feb. to grow, and Experience shews this only can give it the due Strength.

Gardeners are fond of transplanting, but it is often attended with Damage to the Plants: some bear it unhurt, others are assisted by it, but there are many to which it gives a check never perfectly to be recover'd: and this is one.

It is wonderful the Gardeners have not found out this obvious Method: they are all sensible

that the Removings of this Plant are prejudicial to it; and even the most vulgar of them say if they are often removed and parted they die: Yet they advise the sowing the Seeds of the single Kinds in Boxes; and propagating the double by parting of the Roots.

Judicious Reader, what is your Remark on this? — that there are Men to whom their own Experience is useless?



C H A P. II.

The Management of the Flower-Garden.

LAST Week our Gardener clear'd his Borders; and put the whole Ground into a Spring Aspect: let him now see what is wanting that can be supply'd from the Nursery of Flowers, or from other Parts of the Ground.

If the autumnal Plantation of the fibrous root-ed Kinds have been omitted, or if the Wetness of the Ground have render'd it more proper to be delay'd till this Season, let him now bring in the several Kinds of Golden Rods and Asters: after these let him plant Columbines, Sweet-williams, and the scarlet and other perennial *Lychnis*'s; and this done, let him, if needful, bestow his Care on the humble Thrift, and the proliferous Daisy.

If the Plantation of these Kinds have been made in Autumn, let him look over the Ground and see that all holds good; where a Root seems decay'd, let him take it up and place another; and where any one only appears weak, let him take it back into the Nursery, and put a stronger and more secure one into the Place in the Border.

Let him look over his Box edgings; and if there be any bad Part he omitted to mend in Autumn, or any of his new Plantation of that Time that seems weak, let him take the Pieces up and mend them.

In this Plantation of Box he must take Care to close the Earth very well about the Roots, or there will be Danger.

The Winters Care of tender Flowers must not yet be declin'd, the *Anemones* and *Ranunculus*'s, and the other choice Kinds, depend for their Beauty in a great Measure upon what is done now.

They must be as carefully as ever defended by drawing Mats over them, supported by Hoops, in the severe Nights; but they must also be carefully harden'd to the free Air in the middle of good Days; otherwise when they are exposed to it at once, tho' in a more advanced Season, the great Change may utterly destroy

their Roots.

This Week should be the Time for sowing the tender Annuals upon Hot-beds.

It is a Thing of great Importance, for all the Beauty of the Autumn depends upon it; and upon the putting in the Seed thus early, depends the Crop of the succeeding Year; for this bringing the Plants forward in good Time, gives them Opportunity to ripen their Seeds. They are therefore greatly to blame who direct the Gardener to defer this Work till *March*.

A Fortnight now is an Advantage that nothing can equal, or when lost recover; and we can assure our Pupil in the practical Part of this Work, that there requires no more Trouble to bring them forward thus early, than those take who raise them later.

We have directed the making of a Hot-bed for this and other Purposes of like Nature in a preceding Number, and in our last we advised the Gardener to get it ready for sowing by this Time.

We suppose therefore that the Bed is made, and is cover'd four Inches and a half with rich Garden Mould, and that it is just in a Condition to receive the Seeds.

The Thickness of Mould we direct is more than Gardeners commonly use, but it is a very essential Article for the Success of the Growth. Seedlings shoot deeper than is commonly thought, and every Fibre which reaches the Dung perishes; not like one that is cut off, which sends out more; but never to vegetate again. The Thickness of Mould we direct will prevent this, by giving them Depth enough for the Time they should remain in the first Bed.

Let the Mould be perfectly levelled on the Surface, and as much drawn off as will serve to cover the Seeds; then let the Seeds be scatter'd carefully upon the Surface, and sift over them a Quarter of an Inch of the Mould raked off for that Purpose. The Seeds of the *Gomphrena*, *Amaranth*, *Balsam*, *French* and *African*

Mary-

Feb. Marygold, China Aster; and the rest are to be sown in this Manner.

Let the Gardener then leave them to the Effect of Nature; they will shoot in twelve, fourteen, or more Days, according to their several Kinds, the Condition of the Bed, and the Newness of the Seeds; and we shall in the succeeding Weeks tell him how to manage them.

The Green-house will now require the Gardener's greatest Care and Attention; for on his Conduct in this and the succeeding Weeks will depend the Condition of the Plants for the succeeding Summer.

The severe Weather has made it necessary for a Continuance of Time to keep them very close; and in consequence of this we have directed the Gardener to allow them very little Water.

Air and Water are the two great Agents, after Heat, in Vegetation: they have been withheld so long, that the first Opportunity must be seiz'd of admitting them more freely; and probably this will be the Time.

No Day or Week can be in Books set down for this: it must depend upon the Nature of the Season.

If the Weather continue severe, the same Defence in all Respects must be given them, and Water must be withheld in Proportion; all that we direct being in such Case defer'd longer: but if the Air be mild, the middle of the Days warm, and the Nights not very sharp, let this needful Assistance be immediately given them. The Shutters must be kept back the first Day or two; and the next, the Glasses must be open'd a little.

Great Caution is necessary in doing this, for otherwise the tenderer Kinds will perish. They are the less able to bear the Air because they have been so long shut from it, and it must at first be only a very little of the mild Air of a still and warm Day that is let in: from this they must be inur'd to more and more by slow Degrees; and in proportion they must have Water. It must be given them at first by very small Quantities at a Time; and according to their several Natures, some requiring more, some less, and it must be encreased afterwards.

Vegetation is now to be supposed acquiring every Day new Strength in the Plants; and this is to be favour'd every Way. Beside the Assistances of Air and Water, which we have directed to be given in this gradual Manner, Cleaness and a little fresh Mould are the two great Articles.

The Gardener remembers what we directed him some Weeks since to do to his Auricula Pots, let the same now be repeated here; but let it be done with great Care.

Let the Mould on the Surface in the Pots and Tubs be carefully stir'd with a blunt Trowel; and when it is well loosen'd to some little Depth, let it be taken off.

Let some Earth from one or other of the
N^o 23.

Feb. Heaps of Compost suited to the Nature of the several Kinds, be brought into the Green-house two Days before, that it may have lost the Chilness of the open Air; and with this supply the Place of what is taken out as we have directed.

As soon as the Earth is taken away, let the Surface below be examin'd; and if any Fibres of the Roots are seen, let them be carefully cut off with a sharp Knife: immediately upon this let the fresh Mould be pour'd on, and let it be carefully spread over every Part.

From this Time the Waterings are to be repeated occasionally: they will wash in the finer Parts of this new Soil; and with the Admission of a mild Air at the same Time, the Trees and Plants will be very happily set on growing for the Summer's shew.

To assist this farther, the great Article of Cleanliness is to be thoroughly regarded. Probably the Closeness needed to keep out the Winter's Air, will have hurt some of the Plants, and the Scent of their decaying Parts will be perceived.

In this Case let those which are tainted be removed out of the Green-house into some other Place of Shelter, where their Recovery may be attempted; and the Infection thus kept from spreading.

Then let all dead or decaying Leaves be carefully pick'd off; and if Foulness of any kind, Mouldiness or Insects be found on any of the Leaves or Branches, let it be wash'd and wiped carefully away.

Let this Care also be continued to the Stove.

The present Stock being thus put into a good Condition, let the Gardener prepare for a Succession of some, and for an Addition of other Kinds.

The Propagation of the far greater Part of Green-house and Stove Plants, we have shewn is best effected by sowing their Seeds; and the Season of doing that is now at hand. Some raise them wholly upon Hot-beds of Dung; but the far greater part succeed much better sown in Pots of Earth, set up to the Rim in a Bark-bed.

In treating of the common Hot-bed with Dung, we mention'd this with Bark as useful on many Occasions, and we shall here set down the Construction of it; not after their Directions, who, while they pretend to instruct, wish to mislead; but from Experience.

In general, we shall advise the Gardener to raise in the common Hot-bed the Annuals for his open Borders; but the more delicate and tender Kinds, intended for the Stove and Greenhouse, in the Bark-Bed; of which the following is the true Construction,

Feb.

The Manner of making a Bark-Hot-bed.

Procure from the Tanners a good Quantity of their Bark, after they have us'd it; and lay it up in a Heap to drain a little: the next Day mix with it some old Tan that has been us'd, and some Saw-duft.

The Quantity of each should be equal; but no exact Rule can be given for the Proportion they should bear to the Tan; because that is of various Kinds.

It will be proper for the Service of the practical Reader to distinguish the Bark, according to the Size, into three Kinds; the large, the middling, and the small.

Where there is choice of several Sorts, let the middling be chosen; for it heats the most regularly, and continues its Warmth the most equally and uniformly.

If the Bark be of this kind, about one-sixth Part of Sawduft, and the same of old Tan, is the best Proportion.

When the Bark is larger, more Sawduft and old Tan must be used, for otherwise it will not heat readily. If it be the small Tan nothing need be added to it.

The Difference in the Use in the three Kinds is this, the large grows warm slowly; but it keeps heat a long Time: the small heats quickly, but does not last: the middling kind grows warm gradually, and retains its Heat regularly and equally a sufficient Time.

A Bed of this made with the Proportion of Sawduft and old Tan we have mentioned, will retain its Heat four Months very well; and after that, if it be stir'd up with a little fresh Bark, it will answer the Purpose again for a very considerable Time longer.

This Length of Continuance of Heat in the Bark-beds is their great Advantage, for many of the tenderer Plants require it; and no Art can make a Dung Hot-bed answer the same Purpose.

If there be no old Tan in Readiness, the Quantity of Sawduft must be encreased in proportion; and the Heap must lie two or three Days longer than usual before it is used.

The Gardener now understands the Nature of the several kinds of Bark: it will be useful always to add some Sawduft and old Stuff to the Heap; and larger the Tan the more of this must be added; the smaller it is the less will serve.

When the Bark has been broken from the first Heap, and the old Stuff and Sawduft mix'd with it, the whole must be raised up in a Heap again; and thus it must continue gradually heat-

ing while the Gardener is preparing the Pit for its Reception.

Mark out upon a dry Part of the Ground a long square Piece twelve Foot in Length, and six and a half in Breadth.

Dig out the Soil to the Depth of two Foot and a half; and loosen it at the Bottom when it is at this Depth with a Pick-axe.

Then let the Sides be brick'd up, and it will be ready for the Reception of the Bark.

We will suppose about five Days employ'd in this Work; and the Bark which has lain so long in its last Heap, will be just in a Condition to use.

Let it be thrown by a little at a Time into the Pit; and let the Surface be well levelled, and the whole laid close, and beat down gently from time to time as it is laid in.

This will prevent any Hollows which would cool the Mass; and being thus taken in its first Heat, and laid close, it will ferment with a perfect Regularity.

Let the Gardener take a great deal of Care in the laying and beating it down, for upon that depends the whole Success. It must not be beat hard, much less be trod down, as some direct; for in that Case it will heat but very poorly.

The three-prong'd Spade we directed for digging about Fruit Trees, will be the best Instrument to use for the Purpose; and all the beating it should have, should be lightly with the Back of this every Time a fresh Parcel is laid smooth.

The Roundness of the Back of this Instrument will prevent its falling too heavily; and this will properly lay it too close for any great Cavities, and yet not so compact as to stop Fermentation.

The Bark thus carefully laid, the Frame must be put on, and the Glasses shut close. Thus, the Warmth being kept in, the Bark will gradually heat, and in about twelve Days the Bed will be fit to receive the Pots of Earth with the Seeds. We shall then direct in what manner they are to be manag'd; all that remains here to be mention'd, being the Shape of the Frame.

It is a common Error to make this too deep. The Measure I have found succeed best is a Foot and a half Height at the Back, and eight Inches at the Front.

When it is deeper, the Space being larger, the Air is not well warm'd; and this is as essential as the whole to the favourable Growth of the Plants.

The Bed may be requir'd deeper for particular Purposes, and of those we have spoken in their Place. This is the best Measure for the Bark-bed for Seeds.

The best Thickness of Bark is about three Foot, but a few Inches more or less are not material.

Feb.

Feb.

S E C T. II.

The Business of the SEMINARY, for this Week.

THIS is the Time for a very useful Article in the Seminary, the raising Chestnut-Trees.

It is to be done from Seed; and, with tolerable Punctuality in observing the Directions we shall give, the Gardener may depend upon Success.

We have observ'd on many Occasions, that the best Method of raising Plants from Seed, is to obtain it from the Places where that Species succeeds best: the same Caution should be observ'd in the present Case.

Chestnuts ripen'd in *England* will grow freely enough; but the finest Trees are those rais'd from such as have been produc'd in *Spain*.

A great Quantity of these are brought over annually for the Service of our Tables; and from some fresh Parcel a Number sufficient to the intended Plantation should be selected.

Let the fairest and soundest be pick'd out for this Purpose; and let a Piece of Ground in some fresh Part of the Seminary be dug up a full Spade Depth for their Reception.

Draw Lines along this Piece at ten Inches Di-

stance; and then with a Trowel let in the Chestnuts.

First throw them into a Tub of Water, and skim off such as swim, for they are of no Value. Then at six Inches Distance along every Line, open a Hole with a Trowel, break the Bottom with the Point of the Trowel: and place the Chestnut with the Eye upwards; throw in the Mould, and cover it two Inches.

In this Manner set the whole Parcel, and the Trouble will be very well recompens'd; for in about nine Weeks there will be seen the Shoot of a Tree from every Hole. Scarce one in a hundred, when set with this Regularity, ever miscarrying.

The only Care the young Trees require, is to be kept clear from Weeds; and they will thrive very well three Years in this Seed-Bed, after which they should be planted out to a greater Distance; and after four Years more they will be of good Size to plant out where they are intended to remain.

S E C T. III.

POMONA, or the FRUIT-GARDEN.

THE great Article of planting Fruit-Trees is a Work of this Season, and so much depends upon the doing it well, that no Care is too great in the Operation.

In many Kinds of Soil the Autumnal Plantation is best; but where the Ground is apt to lodge Wet, from a firm clayey Bottom, this Week is a more proper Season.

This makes it an Act of Prudence to defer the Plantation to the present Time; and in many other Cases it is an Act of Necessity. If the Autumnal Plantation have been omitted; if the Possessor of the Garden is but just come to it; or if any of those planted at that Season fail: in all these Cases the present Week is the Time of Plantation; and let it be done in this Manner:

In the Beginning of this Week, let the Gardener, wherever he designs to plant, break the

Earth well, if the Hole have been open'd before, according to our Directions; and if not, let him now dig it large and deep, throwing the Earth out in a Ridge, and breaking the Bottom the Depth of a Pick-axe.

Once in the Week let it be well broke, and turn'd up again; and at the latter End of the Week let him bring in the Trees.

These should be taken up carefully without Injury to their Roots. The common Way is to chop these off with a Spade; but let our Gardener take them off, wherever he can, with a sharp Knife; and wherever the Spade has bruised them let him trim them even.

The Cut is always to be made sloping downwards.

This done, the Head is to be lessened, in the Manner we have before directed; for the Roots cannot supply the usual Quantity of upper

Feb. upper Growth immediately after their Removal.

Let the Trees be set carefully upright, and the Mould thrown in gradually and well clos'd about them.

Take Care all the Roots spread in the free and natural Manner: this is the Use of having the Hole big enough: and let them be set at such a Depth, that the upper Part of the Roots be just upon a Level with the Surface. They must

be covered a little, for the Earth will settle.

Feb.

If the Mould be moist, sift some Coal-ashes among it, for otherwise it will not get in among the small Roots: for this Reason, the best Time for this Planting is just after a Frost, when the Soil is crumbly.

In Setting, shake the Tree a little to let the Mould in between all the Roots; and when lightly trod down, without bruising the Roots, draw it up in a little Hillock round the Stem.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

LET a Bed be dug very well for the sowing of Onions, and another for Leeks: these will succeed without Danger; and it will be proper now to sow a large Bed at once.

Let a small Piece be laid level and fine for Cabbage Lettuce-Seed. A little of this should be sown at a Time, and a fresh Bed made once in ten Days, that if one Parcel miscarries another may succeed.

Dig up a deep and rich Part of the Ground, and, dividing it into two Beds, sow one with *Sel-fatie*, and the other with *Scorzoner*.

The Roots will grow to a Size for the Table very quick from this Sowing, and they will be more tender and of a better Flavour than any that come later: but let the Gardener take Care to draw them as soon as they come into Condition; and the quicker they are us'd, the better; for they will run up into Stalk quickly: and as soon as that is but begun, the Roots grow sticky.

Let a small Hot-Bed be made this Week for

Cauliflower-Seed. The Plants rais'd from it will require a particular Management; but they will come in at a very good Time, long after the early Crops are gone, and they will be very acceptable. The Seeds will grow very readily, and the Plants will rise with little Care.

The great Art in bringing them to good, is to plant them at large Distances, in a low Part of the Garden, and to give them frequent and large Waterings.

When the Heads appear, the inner Leaves must be crack'd at the Bottom, and bent in over them; and thus defended from the Sun, and supply'd well with Moisture, they will be large, white, and very well tasted.

Bury some Dung in a Trench, cover it with six Inches of Mould, and sow *Cos* and *Silefia* Lettuce-Seed. There need be no Defence over this; except the Weather should prove very severe; but the Plants will come up favourably.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XXIV.

For the third Week in FEBRUARY.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and curious Plants now in their Perfection.

I. TREE MINT.

Feb.
Plate
XXIV.
Fig. 1.

AMONG all our Collections there are few Exotics of more Curiosity than this: a Mint rising to the Height, and acquiring the Firmness of a robust Shrub or small Tree; and covering the Tops of its divided Branches with Snow-white Flowers.

Scarce any Plant has been, in the Uncertainty of Science, more strangely mis-nam'd. It is indeed to the Credit of our PLUKENET, that he refer'd it to the proper Kind, naming it *Mentha Canariensis frutescens*: Shrub Canary Mint.

COMMELINE has made it a *Turnsole*: he calls it *Heliotropium Canariense arborescens*: Canary-Tree Turnsole: and as Errors have generally the Fortune to be best remember'd, this is the Name by which it is most known, altho' the other occurs in a Writer at least as familiar to the modern Student.

LINNÆUS vindicates the Determination of PLUKENET, referring the Plant to the Mints: he adds, as its specific Distinction, *floribus capitatis axillaribus dichotomis, foliis ovatis crenatis, caule arbore-scente*: Oval and indented-leav'd Tree-Mint; with cluster'd Flowers on split Branches rising from the Bosoms of the Leaves.

The Root is woody, brown, and divided into numerous Parts.

Numb. XXIV.

The Stem, in its natural Place of Growth, often rises naked to twelve Foot in Height; but more usually there, and constantly with us, is branched from the Bottom, and of the Height but of four or five Foot. The Gardener should not trim it for a Tree, because in this other Form it is better.

The outer Bark is brown; and, on the small Shoots, has a Tinge of red: the inner Rind is green. The young Shoots are square in the Manner of the Stalks of our common Mints; but as they grow more firm, they loose their Angles and become round: they have also a downy Matter hung about them at first, which falls off as they grow harder.

The Leaves stand naturally in Pairs, but not invariably: they have long brownish woody Foot-stalks; and they are of an oval Form, bluntly indented at the Edges, and obtuse at the End. Their Colour on the upper Side is a fine pale green; and on the under they are white and hoary. The young Stalks are also hairy, and the upper Side of the Leaves, tho' less distinctly.

The Flowers are very numerous, naturally of a Snow-white, but sometimes ting'd a little with a Blush of red. They are singly small, but they stand collected in thick Heads or rounded Clusters,

Feb.

Feb. sters, and they have hairy Cups, which are very conspicuous, and add no little Singularity.

The Footstalks which support these rise from the Bosoms of the Leaves, from Top to Bottom of the Plant; and they naturally divide into two Parts when they have reach'd about two thirds of their Length: these separate Parts support each a Tuft of Flowers. This Division into two Parts regularly, is what Botany calls *dichotomous*.

The whole Plant has an aromatic Smell when bruis'd, and the Leaves, especially when newly produc'd, have a very agreeable Taste.

The Student, to understand the proper Place of the Plant in a Botanical System, and know with what Justice it is refer'd, from so unlike a Genus as the Turnsole to the Mint, will naturally be led to examine its Flowers.

The Cup in which each is plac'd, he will find form'd of a single Piece, and tubular at the Bottom, nip'd at the Rim into five Segments.

The Body of the Flower is form'd of a single Petal, tubular, and divided at the Rim into four Segments, of which the upper one is broader than the rest, and nip'd at the Top.

In the Body of this Flower he will find four Filaments, crown'd with roundish Buttons; and of these he will perceive two are longer and two shorter. In the Midst of these rises a single Style, from a slight Rudiment of a Fruit, rising in four Ridges. This should ripen into four distinct Seeds; but the Mints in general have them often abortive.

The different Length of the Filaments shews the Student he is not to seek the Class in their Number, but in this Disproportion. The *Didynamia* receive all Plants in whose Flower there are two longer Stamina; and the single Style shews that it belongs to the *Monogynia*.

Culture of the TREE MINT.

Feb.

It is a Native of the *Canaries*, where it thrives best in a rich, light, but not too dry Soil. This we must imitate in the Compost made to receive it: and with the Winter Shelter of a Green-house, we may raise it to all the Strength and Vigour of its natural Growth.

The best Compost is this:

Dig a Barrow of good rich black Mould from under the Turf in a Meadow: mix with this an equal Quantity of Pond-Mud, a Bushel of coarse Sand, and a Peck of Hogs Dung. Throw this in a Heap, and turn it occasionally: it will serve for this and several other of the *Canary* Plants, from the same Kind of Soil.

In this Compost the Shrub may be rais'd either by Seeds or Cuttings; but the latter is much the better Method: it saves a great deal of Trouble; and the Plants are generally stronger.

If there be a Necessity of raising it from Seed, from the want of Opportunities to procure Cuttings, Care must be taken to get the Seeds from the *Canaries*, for it very rarely ripens them here; and often, even then, so imperfectly, that not one in fifty grow.

Therefore to raise a few Plants a great deal of Seed should be sown; and it must have the Assistance of a Hot-Bed in Spring: from this the young Plants must be remov'd to a second; and thence into Pots, as we have directed for raising other Green-house Plants.

The Cuttings should be procur'd from a flourishing Shrub; and in the Beginning of *April* planted in Pots of the Compost.

These must be set in a Bark-Bed of very moderate Heat; and when they have taken Root they may be brought out by Degrees among the Green-house Plants; after which they will require only the common Care. They must be hous'd early; and they require frequent Waterings.

The Cuttings may be rais'd in the open Air: but they root more slowly and uncertainly.

2. WHITE AMERICAN PURSLAIN.

Plate XXIV.
Fig. 2.

This is an upright and handsome Plant: the Leaves are of a pleasing Shape and very elegant Colour; and the Flowers spread into a broad Cluster from the divided Summit of the Stalk.

'Twas early brought from the *American* Meadows into the Collections of those who rais'd curious Plants in *Europe*: and HERMAN call'd it *Portulaca Americana latifolia erecta*: Upright broad-leav'd *American* Purslain.

The rest have copy'd this; and luckily the Genus has not been mistaken, tho' there is a Singularity in the Stigma in which it differs from all other known Species; and from which it derives its proper specific Name, *Portulaca floribus pedunculatis stigmate tripartito*: Purslain, with the

Flowers on Footstalks, and the Stigma divided into three Parts.

The Root is white and fibrous.

The Stalk is round, upright, and thick, but of a tender Substance. At the Bottom it is strongly ting'd with red; upwards its Colour is a bright silvery green.

The Leaves stand thick upon it from the Bottom to the Top: they have no Footstalks, but adhere by a narrow Base, from which they grow broader to the Extremity.

Their Colour is a bright fresh green; and they have a thick juicy Substance. At the Extremity they are rounded and broad; and frequently they have in that Part a heart-like Dent.

The

Feb. The Middle Rib, especially in the lower Leaves, is large and conspicuous, and its Colour is usually reddish, especially toward the Base. The Taste is watery; but there is a latent Acidity and an austere Flavour at going off.

The Flowers cover the Top of the Plant in a large loose Head.

The main Stalk divides in this Part into a vast Number of Branches; and on each there are many Flowers; they spread out wide every way; and there are all down them Flowers on slender reddish Footstalks, at Distances.

The Flowers themselves are of a snowy white: accidentally they are sometimes ting'd with a Blush of Flesh-Colour, which gives them a singular Aspect; but the Beauty is not less in the true and genuine milky Whiteness.

The Seed-vessels are roundish, and terminated by a Point; and in each are a Number of small Seeds.

The Student, examining this Flower, will perceive that its Cup is form'd of a single Piece, and is of a peculiar Structure, split into two Parts, and compress'd at the Top: this is peculiar to the Purslain Kind; but it is universal among them.

The Flower itself is form'd of five Petals, oblong, somewhat oval in Form, and spread wide open. In the Centre stand twelve short Filaments, each top'd with its round Button; and bury'd among these is the Style, which, tho' simple in itself, has three Stigmata or Tops; this is peculiar to the present Species, the others have five.

The Student will have no Difficulty to refer this Plant to its proper Class. Twelve Filaments and

Feb. a single Style declare it to be one of the *Dodecandria Monogynia*, the twelfth Class in the LINNÆAN Method, and its first Section.

Culture of this PURSLAIN.

The Plant is an Annual, native of the warmer Parts of *America*, and fond of a deep, moist, and mellow Soil: this declares its Culture.

We direct our Gardener to form himself upon these rational Principles: to learn the Place where the Plant is native, and its favourable Soil, and to accommodate all he does here to the Resemblance.

Early in Spring let the Seeds obtain'd from *America*, or gather'd here, for either answer very well, be sow'd upon a common Hot-Bed, with other Annuals.

When they have acquir'd some Strength in the first Shoot, let them be transplanted with the other Kinds into a second, and thence into a third Hot-Bed.

This is the best Method; and where the whole Autumnal Store is rais'd together, the Trouble ought not to deter the Gardener.

From the third Bed let as many as there are chosen to be preserv'd, be planted into separate Pots of rich Garden-Mould. Let them be frequently water'd, and kept under a Hot-Bed Frame, till they are well strengthened in the new Earth: then let them be set out with the other Greenhouse Plants, and kept in the free Air till Autumn: they are then to be remov'd into the Greenhouse, where they will flower in Perfection; and their Leaves will give a fine Variety.

3. MULTIFID-LEAV'D AFRICAN SENECIO.

Plate
XXIV.
Fig. 3.

This elegant and conspicuous Plant is one of those *Senecios*, which the Beauty and long Rays of the Flower have refer'd to the *Aster*, or Starwort Kind, among the earlier Writers; but to LINNÆUS we owe a better Distinction; and, among the *syngenesious* Genera, that of *Senecio* properly receives it: many beside this, being, according to that Method, refer'd to the present Genus, as the *Aster Senecionis foliis* of COMME-LINE: this VOLKAMER made a *Jacobæa*, and LINNÆUS has nam'd it *Senecio corollis radiantibus foliis pinnatifidis*.

The Root of this Species is oblong, brown, and hung with numerous Fibres.

The Stalk is upright, slender, and divided into many Branches.

The Leaves are numerous; and their greyish green, with the natural brown Hue of the main Stalk, gives a pleasing Variety of Colour.

They are long, and divided in the Manner of a Stag's Horn into numerous Segments: from a whitish Colour they have when young, they grow more and more green as they expand; but at

their fullest Size, there is a Tinge of greyish, with the green above; and on the under Part they are paler and more grey.

The Flowers are plac'd singly upon long naked Footstalks, which rise from the Bosoms of the Leaves and Tops of the several Branches. They are large, and of the composite radiated Kind. The Rays are yellow on the Inside, but of a deep purple without; and the Disk in the Middle is yellow.

The Student, examining this Plant with the Eye of Science, will find the Disk compos'd of numerous Floscules, tubular, oblong, and divided into five Segments at the Edge. The Rays surround this from twelve to twenty in Number; and the whole Flower is plac'd in a Cup form'd of many narrow Scales, surrounded at the Base by a smaller Number of broader, whose Tops are wither'd.

In each Floscule are plac'd five Filaments, whose Buttons coalesce into a Cylinder; and this shews it one of the *syngenesious* Class, as are all the other Plants of the *discoide* Kind, whether radiate or naked.

Culture

Feb.

Culture of this SENECEO.

It is a Native of the *Cape of Good Hope*, and was first known in *Europe* in the *Dutch Gardens*. It is a perennial Plant; and improves in Beauty each Year; but it requires good Care.

The Cuttings take Root freely: or it may be rais'd from Seed. In either Case, the proper Compost is an equal Quantity of Garden Mould and fresh Pasture-Earth.

The Seeds are to be rais'd in a Hot-Bed in the

usual Way; and the Cuttings must be planted in Pots of this Mixture, and plung'd in a Bark-Bed, to promote their Rooting.

Which ever Way it is rais'd, it must be set out among other Exotics, in Summer, and hous'd early in Autumn. After this, the great Care it requires is Cleanliness; for no Plant is so apt to be over-run with Filth; and this quickly kills it.

The Gardener must wash off Mouldiness or Insects wherever he finds them; and this Way the Plant will produce its beautiful Flowers all Winter.

Feb.

4. CRIMSON OXALIS.

Plate XXIV. Fig. 4. A most singular and handsome Green-house Plant; which with no Length of Stalk, or spreading Branches, covers the Surface of its Pot with vast Flowers of the liveliest Crimson, at a Season when the other Plants in general, which have flowered thro' Winter, are decaying.

Those who have written on the *African Herbs*, have celebrated this elegant Species largely; and all have refered it to the proper Genus: the Marks indeed, are impress'd too strongly to be mistaken, or pass'd unheeded.

BREYNIUS indeed calls it, *Oxalidi affinis bulbosa Africana*. — BURMAN, *Oxys bulbosa hirsuta* — He makes the Flowers white; but we know how easy Accident occasions that light Change. The Plant remains the same.

LINNÆUS, more correct than all, distinguishes it by the Title, *Oxalis scapo unifloro foliis ternatis, radice bulbosa*: Ternate-leav'd bulbous Oxys, with one Flower on each Stalk.

The Root is roundish and of a brown Colour, of the Bigness of a Hazel-Nut, and compos'd of three or more oblong distinct Parts, wrapp'd in several Rinds.

From the Bottom of the general Root rise many Fibres; and from the Top of each particular Part several Stalks, some supporting Leaves, some Flowers.

The Leaves are very numerous when the Plant has stood some Time, and they are themselves of very singular Beauty. Three grow together upon every Footstalk.

Their Colour is a fresh and elegant green on the upper Side, and the same lively Tinct, cover'd with a silvery grey, underneath: they are large and rounded at the End.

The Footstalks are long, moderately thick, and of a beautiful red.

The Flowers are in Number equal almost to the Leaves, and they are plac'd on slender and weak Footstalks; one on the Top of each: these bend with them, partly from their own Weakness, and partly from the Size of the Flower: they are of a pale fleshy red; and the Flower itself of the most lively Crimson. Before they are fully open'd, they curl in the Manner of

the Flowers of some of the Bind-weeds; and they have, when newly open'd, a light Fragrance at Evening.

The Cup in which this Flower is plac'd, is small and permanent: it is form'd of a single Piece, divided lightly into five Segments.

The Body of the Flower is compos'd of five elegant Petals, broadest at the Extremity, where they are usually dented in the Middle; and very narrow at the Bottom, where they cohere by the Bases.

In the Centre rise ten Filaments, the outer ones somewhat shorter than the others; and among these five Styles.

The Seed-vessel is oblong; and, when ripe, bursts with Violence.

The Student needs not be now inform'd, that a Plant with ten Filaments and five Styles, is one of the *Decandria Pentagynia* of LINNÆUS; the tenth Class and its first Section.

Culture of this OXALIS.

The Plant is a Native of *Africa*, where it fringes the Edges of those little Brooks that run down shadowy Hills. It loves a moist rich Earth; but is kill'd even where native, if too much within the Influence of the Water.

With us it may be rais'd from Seeds, or from the parted Roots; for when the Plant has stood a few Years, it encreases by these abundantly.

In which ever Way it is rais'd, let the following Soil be prepar'd for it:

Mix equal Parts of black Meadow-Earth and Pond-Mud: to a Bushel of this add half a Peck of old Cow-dung, and a Quart of large clean Sand.

Mix these well, by screening them after good breaking; and with this fill two or three Pots.

If the Roots be us'd, it is best to plant about eight Off-sets in a middle-siz'd Pot; for the Intent is, that the Leaves and Flowers from them should fill the Pot, and hang every way over its Surface. These should be shaded and water'd carefully, till well rooted in the new Soil; and then treated as the other Greenhouse Plants. They will flower the succeeding Spring, as early as this Time,



Tree Mint



White American Purslain



Multifid leaved African Senecio



Gimson Oxalis



Creeping Othoua



Many leaved American Capia

Feb. Time, and every Year afterwards they will be more numerous.

When the Method of raising from Seed is prefer'd, the Plants are to be treated in the Way of other Greenhouse Kinds: and it is best to sow the Seeds in a Pot of the Compost just directed, and

to set it in a Bark-Bed.

When the Plants which rise this Way are large enough to be remov'd, four or five of them should be planted in one Pot, and the same Method taken to bring them to flowering that we have directed for the others.

Feb.

5. CREEPING OTHONNA.

Plate XXIV. Fig. 5. The Singularity of this Plant carries a sufficient Recommendation for all the Care and Culture it requires. We read of it in most who have had Opportunities of examining the *African* Plants; but 'tis not till of very late Time its true Place, in a regular System, has been establish'd.

It has been call'd a *Jacobæa*; and its common Addition of Distinction has been, *Hederæ terrestris folio repens*.

LINNÆUS, to whom in his later Works we owe its proper Distinction, rank'd it, in some of his earlier, among the *Solidago's*; and others have follow'd him in it; but in his latest Works he makes it an *Othonna*.

The Reason will be sufficiently seen when we come to examine the Flower: and he adds, as its specific Distinction, *foliis reniformibus suborbiculatis denticulatis petiolatis: Othonna*, with roundish but somewhat kidney-shap'd Leaves, dented at the Edges, and plac'd on Footstalks.

It is a Plant too weak to raise itself from the Ground; but with proper Supports, it will reach to six or seven Foot in Height.

The Root is long, white, tender, and hung with many Fibres.

The Stalks are numerous; and, in the State of Nature, lie upon the Ground, or hang among the Branches of Shrubs, spreading every Way; till from one Root a Space of many Yards will be covered. The Colour of these is brown toward the Ground, and green upwards.

The Leaves cover these irregularly: they have long Footstalks, hollow on the upper Side, rounded below, and of a pale green Colour. The Leaves themselves are rounded on the outer Edge, but hollow'd to receive the Stalk. They are sharply dented on the Edges; and their Colour is a pale green, but lively; and often the Ribs are redish.

The Flowers cloath the Tops of all the Stalks in large Tufts, resembling Umbells, of a loose Composition; each Flower being large, and plac'd on a long Footstalk.

These are of the composite radiated Kind, but the Rays are few: these are of a pale and the Disk are of a deeper yellow.

The Flower examined accurately, the Class of the Plant will be evidently discover'd; nor will it be less plain with how much Reason the later Authors separate it from the *Jacobæa's*.

The Cup shews a plain Difference from all those Kinds: it is not, as in them, compos'd of many Series of Scales, but form'd of a single

Nº 24.

Piece, rounded at the Bottom, and divided at the Edge into about eight oblong Segments.

The Flower itself consists, as in others of this kind, of a Disk, form'd of a Multitude of tubular Floscules, and surrounded by about eight female or ligulated Floscules at the Edge: but this Number is not certain, any more than that of the Segments of the Cup.

The tubular Floscules are very short, and they are divided into five Segments at the Rim: in these are plac'd five Filaments with coalescent Buttons, and there are also the Rudiments of the female Parts, but these are usually imperfect, and consequently abortive.

The female Floscules are flat, oblong, and naturally, when ripe, they turn back. These have no Filaments; but from the Rudiment of the Seed there rises a single Style, with a large Stigma or Top, which is divided into two Parts, and turn'd backward.

From this Construction of the Flower, the Student knows the Plant is one of the *Syngenesia*: and to learn under which of the Subdivisions of that Class it is to stand, he must examine it with respect to the Seeds. He will find every one of the ligulated Floscules succeeded by a single Seed; but scarce any will be found to follow the tubular ones of the Disk, their female Parts being, as we have observ'd, abortive.

'Tis for this Reason so large a Provision is made by Nature in the Stigma of the female or ligulated Floscules; they having no Filaments of their own, but depending on the Farina, from those of the tubular Floscules, for their Impregnation.

The Plant therefore is one of the *Syngenesia Polygamia Necessaria*, the Impregnation from the Central Floscules not being superfluous.

Culture of this OTHONNA.

The Plant is a Native of the *Cape of Good Hope*, and other Parts of *Africa*. It winds among the Thickets of the *Lion's Mountain**, so as to render them, by its entangled Stalks, impenetrable without great Labour; and hangs in streaming Branches of eight, ten, and twelve Foot Length down the steep Banks of the *endless River*† as far up as its Source has hitherto been trac'd. The sporting of its wanton Branches in the Winds, and the Reflexion of its perpendicular Tufts of golden Flowers from the Surface of the Water, are extremely pleasing.

* Near the Cape.

† Near the Cape.

4 C

There

Feb. There Mr. BAYHERE assures me has seen the Flowers on the Extremity of one Stalk, spread out into a circular Tuft of a Foot and half Diameter; and glow with a yellow that Gold hardly emulates.

The Soil which favours it is a black rich Mould, impregnated with the Richness of decay'd Vegetables; for it never thrives in this luxuriant Manner, unless where the Ground is mellow'd by fallen Leaves and rotted Branches of Trees, and moisten'd in some Degree by neighbouring Water.

On the dryer Parts of the same Mountain, he says, the same Plant is a poor inconsiderable straggling Weed, not a Foot in Length in its best Stalks, and the Flowers small and few.

From this Account we learn the true Method of its Culture; and one great and universal Lesson more: which is, that in a State of Nature, where the Soil and Situation do not favour it, the Plant will be very much beneath its proper Condition, even tho' it flowers; much more may it be so with us when rais'd by Force.

It is a biennial Plant, and must be propagated from Seed. This may be easily had from the Cape; the more easily, as the Letters of this valuable Correspondent mention the particular Places of its Growth; or it will grow from such as ripen here.

Let a Compost be made for their Reception, thus:

Mix two Bushels of rich black Mould from under the Turf in a Meadow, and one Bushel of Pond-Mud; add two Pecks of mellow Earth from under a Wood-Pile; and when all are thus blended well together, fill a Couple of Garden-

Pots with them. Scatter the Seeds carefully over the Surface, and sift over them a very thin Covering of the same Mould.

Set these Pots up to the Rim in a Bark-Bed, and give them once in three Days a very gentle Watering.

When the Plants come up, take up the weakest where they grow too close, and leave one strong Plant in the Middle, or near the Middle of each Pot; this is never to be transplanted: but three or four may for the present be left at due Distance in each Pot, to be remov'd afterwards.

As these rise in Height, let them have Air in the Middle of the Day; and Water once in two or three Days.

About the fifth Week from their first Appearance, let a Couple of the best of these be planted in middle-siz'd Pots, and the others in very small ones, leaving only the single Plants intended in the original Pots.

These new-planted ones must be set up to the Rim of the Pots in the Bark-Bed, and shaded and watered till they have taken Root: after this, they are by Degrees to be inur'd to the Air; and, at the Approach of cold Weather, plac'd in the Greenhouse.

Early the following Spring, let those in the small Pots be carefully shook out, and planted in different warm and shelter'd Spots in the open Ground; and of the others, let some be ty'd up to Sticks, thrust into the Pots for that Purpose; and others left to fall and hang their own way over their Edges.

They will all flower the succeeding Autumn; and, with good Management, thro' the whole Winter.

6. MANY-LEAV'D AMERICAN CASSIA.

Plate XXIV. Fig. 6. The Beauty of this Plant, in Leaves, Flowers, and Fruit, very justly claim a Place for it among the most conspicuous of the Exotics.

Most of the late Writers have mention'd it; but LINNÆUS has chang'd, from very substantial Reasons, its Generical Name.

BREYNIIUS and COMMELINE call it *Chamaecrista pavonis*. That Author refers it to the numerous Cassia Kind; and placing it among those with many Leaves on the same Footstalk, adds, as its Distinction, *foliolis multijugatis glandula petioli pedicellata, stipulis ensiformibus*.

The English Reader must not expect a Name abounding thus with technical Terms, to be translated without Circumlocution: for to render the Words *stipule*, and the rest, as they are written in the Latin, tho' it be the Custom of those who pretend to give the LINNÆAN Names in English, is not translating nor explaining them: it gives the Reader no Knowledge; and it confesses an unlucky Truth, that the Writer does not understand them.

The Sense of the Name is this: Cassia, with

numerous little Leaves upon each general Footstalk, with a Glandule rais'd on a small Stem at the Footstalk of the Leaf; and filmy Scales in the same Part of a Sword-like Shape.

So much may be convey'd by a few scientific Words; and less would not answer the Purpose for the Distinction of a Plant, of whose Genus there are so many Species.

The Root is white, long, and furnish'd with numerous Fibres.

The Stalk is round, upright, branched from the Bottom, and so well covered with Leaves, that the whole Plant makes an extremely beautiful Appearance.

Where it is native, it rises to four or five Foot high, and spreads out every way to a great Compass. With good Management, it will nearly reach the same Bigness with us, tho' we usually see it much less. The Stalk is brown toward the Bottom, but upwards of a pale silvery green.

The Leaves are extremely beautiful; they are of the pinnated Kind; but the small Leaves or Pinnæ

Feb. Pinnæ are plac'd alternately, not in opposite Pairs. There are from eighteen to two and twenty of these on the two Sides, and an odd one at the End.

Their Colour is a light chearful green; and they are oblong, narrow, and obtuse.

In the natural Growth the Films and Glandules about the Bases of the Leaves, are constant and uniform: the little Footstalk of the latter rising at a small Distance above that of the Leaf.

The Flowers are numerous, large, and very beautiful; they are of an elegant gold yellow, and they are of considerable Duration.

Each has its little Cup: this is form'd of five small yellowish pointed Leaves, united at their Bases.

The Body of the Flower has five Petals: these are oblong, and rounded at the Ends; two are plac'd more distinct than the others, at the Bottom; and the rest standing more close the whole Flower has a singular Aspect. These two lower Petals are also somewhat larger than the others.

In the Centre rise ten thick Filaments, which make a very conspicuous Part of the Flower when it is fully open: they are bent downwards; and are of a fine pale green on the under Part; but, from the Bending to the Top, yellow. They are unlike in Length; and, in their terminating Buttons: three stand lower, and are longer than the others; and three more stand separate upwards, and are shorter.

The Buttons upon these are small and inconsiderable: those on the three under ones are very large, of a hooked Form, and terminated by a kind of Beak: those on the four others are large, but they want this Beak.

In the Midst rises a single Style, from a Rudiment of the Fruit, supported on a little Footstalk.

The Seed-vessel is a Pod resembling those of the leguminous Kind, but divided by cross Partitions. The Seeds are large and black. The Pod itself is green at first; and, as it ripens, becomes brown, with a Tinge of red; and at last nearly black.

The Flower is as full of Beauty as Singularity; for the Colour of the Body of the Petals is perfect gold, and their Bottoms are purple.

The Student will know, in the Midst of all the Singularities he finds in the Body of the Flower, that the Number of the Filaments is to denote the Class of the Plant; and consequently that it is one of the *Decandria*; the tenth in the LINNÆAN System.

There are Variations in the Length of Fila-

ments, which being common to many Genera, and invariable in all, become the proper Distinctions of Classes: such are the two longer in the *Didynamia*; and the four longer in the *Tetradynamia* of the LINNÆAN System: but this Singularity in the *Cassia* being peculiar to that Kind, does not become the Mark of a Class, but very justly supports the LINNÆAN Method, in joining under one Generical Name all the Plants which have it. The single Style shews this also to be one of the *Monogynia*.

Culture of this CASSIA.

It is a Native of the warmer Parts of *America*; and with us will never attain its full Beauty and Perfection but in a Stove.

'Tis to be rais'd from Seed; and the same Compost we directed to be made for the last mentioned Plant, will very well suit this; for it grows naturally in the same kind of damp, rich, and mellow Soil.

Early in Spring let a Couple of Pots be fill'd with this Compost, and about twelve of the Seeds laid at regular Distances on the Surface of each. Let a quarter of an Inch of the same Mould be sifted over them; then let them have a gentle Watering: then set them up to the Rim in a Bark-Bed.

When the young Plants appear, let them every other Evening be gently water'd, with Water that has stood all Night in the Bed; and at Noon, when the Days are mild, let them have a little Air. When the Nights are cold, let them be defended, by laying Mats over the Glasses.

Thus let the young Plants be manag'd till they are three Fingers Breadth high, and they must then be remov'd each into a separate Pot, and plac'd again in the Bed, watering them every Evening, and carefully shading them till they have taken Root; after this, the Waterings are to be repeated once in two Days; and every Day at Noon when the Weather favours.

The Beds must have Air, by opening the Glasses; but let the Gardener remember these are Natives of a hot Climate, and impatient of severe Cold. Therefore let the Beds be covered at Sun-set with Mats or Cloths, and uncovered an Hour and half after Sun-rise, till the Summer is well advanced, and the cold Nights are over.

After this, as they grow larger, they must be shifted into bigger Pots; and when they reach the Glasses of the Frame, they must be brought into the Bark-Bed in the Stove. They will there flower all Winter.

C H A P. II.

The Management of the Flower-Garden, Greenhouse, and Stove.

THIS Week let the Gardener pot his Carnations, from which he expects a Shew of Flowers, and let it be done with Care.

Let him chuse for this Purpose some one of our light rich Composts; or in Time make one purposely, with good Pasture-Earth, Pond-Mud, old Cow-

Feb. Cow Dung, and a little Soot.

Let them be taken up with as much Earth as will hang about their Roots; and one placed in the Middle of each Pot, spreading the extream Roots to their full Extent, without bending or confining them. Then snip off the Ends of these Roots with a Pair of sharp Scissars, and immediately pour in the Mould; a little at a Time: see that it gets in among the Roots; and when they are cover'd up to the Bases of the Leaves, give a little Water.

When all are thus potted, set them in a Place open to the South East, and defended from the North Winds.

Here they are to remain two Months; and once in four Days they should be water'd, and now and then the Surface of the Mould stirred about them: this will bring them to a due Strength and Condition for placing upon the Stands where they are to flower. The farther Management of them we shall shew at that Time.

Take good Care of the Auricula Plants; for they now will shew their Buds for flowering. It will be of great Use to stir the Earth very lightly upon the Surface in all the Pots; and once in four Days to give them a gentle Watering.

Let the Gardener with a careful Eye look over his Ground to see if any thing has miss'd which was planted in Autumn, or if there be any Vacancy which he left unsupply'd at that Time; in such Places let him now plant the perennial Catchflies, Foxgloves, and Gentianella's.

These Experience shews succeed happily when planted at this Season; and all that is requir'd for the securing this, is to open the Holes large enough, to take up the Plants with a good Quantity of their own Earth; to spread their Roots well out, and clip off their small Extremities before the new Mould is pour'd over them. After this, with due Waterings, the Newness of the Soil will make Amends for the Check of taking them out of the Ground, and they will succeed as well, or very nearly so, as those planted in Autumn.

Let the Gravel-walks be now very well cleaned; and broke up where there is Occasion; and let no Root of any perennial Weed be left in them. The slight Offspring of Annuals from scatter'd Seeds will be easily rooted out without breaking the Surface, afterwards; and the Walk being clear'd of these, may be rolled hard for the succeeding Use in tolerable Weather.

Let the Orange Trees in the Green-house be now carefully examin'd; and where they are in a drooping Condition, let them be refresh'd by removing into new Earth.

Let this be done with a great deal of Care;

and let the Gardener observe that the Expedition of performing the whole Operation, is one great Article in its Success. Feb.

Let him place his fresh Earth ready, and then examining the Tree to see what Part is decay'd, and what sound, let him first of all cut away the dead Branches.

Then with warm Water let him very carefully wash the Trunk, and principal Boughs; and then take them up.

Let him examine the Roots carefully; and if any be decay'd or mouldy, let him cut those carefully out; then trimming the extream Fibres of all the others, let him plant them immediately in the new Mould, shaking the Tub at Times to make it settle well among the Roots.

When it is all in, let there be a gentle Watering given it; and then let a Piece of Matting be carefully wound round the Stem to keep it from drying or cracking.

In this Condition let them be again set in their Places, and as the Season will now grow warmer every Week, and more Air may be admitted into the Green-house, they will recover with the Assistance of moderate but frequent Waterings.

This is to be the Practice with those which are but in a declining State; but such as are farther gone must be treated with more Care: and little less Trouble will be requir'd for them than for such as are to be brought to make their first Shoots.

These are to be treated in all Respects as the former, till they are compleatly new set; only that the Heads must be pruned closer, and the Roots wash'd as well as the Stems; and they are then instead of being put into their old Places, to be set in a Bark-bed in a Stove: then from time to time they must be water'd, Head and Stem as well as Root, with Water that has stood four and twenty Hours in the Stove.

With this Management they will shoot fresh.

Let all the other Plants and Trees be carefully look'd over and clean'd: let dead Leaves be pick'd off; and all Filth, whether from Insects, Mouldiness, or of whatsoever kind, be wash'd away.

When the Earth has not been stir'd upon the Surface, let it now be done; and a little fresh Soil from some proper Heap of Compost, of the Nature of that which best suits the Tree, be sprinkled over it.

After this, as the Weather is becoming milder, and will permit more Air to be let in, let the Trees and Plants be water'd more largely; but let the Water for these also stand a Night in the House before it is used, that it may be of the same Temperature with the Air of the Place.

Feb.

Feb.



S E C T. II.

The Business of the SEMINARY, for this Week.

LET a Piece of Ground be clear'd and prepared for planting Evergreens: a very good Season for that being now approaching.

Care must be taken that the Earth in which they are planted be not too rich, and that no Weeds remain in it to rob them of the proper Portion of Nourishment.

It is fit the Ground where they are rais'd should be poor, that they may thrive in the Places where they are afterwards to be planted: but then whatever Nourishment there is in a Piece of Ground thus proper to receive them, they should have it entire, not be rob'd of it by other Plants.

Therefore when a proper Part of the Seminary is fix'd upon for this Purpose, let some fresh Earth from a barren Pasture be sprinkled over it an Inch deep: then let it be dug up to a good Depth; this new Mould work'd in, and every Root of a Weed taken out.

This is the more needful to be done now, because it is almost impossible to clear the Ground of these Plants when the proper ones are in.

When it is well broke, let it be thrown up in Ridges till it is level'd for planting.

If there be mild Weather this Week, let the Gardener get all the hardy Kinds of Trees and

Shrubs, which he intends to plant, into the Ground: closing the Earth well about them; and covering it with Pea Straw about the Roots.

If Currant and Gooseberry Bushes are wanted; and the planting of Cuttings have been omitted in Autumn, or have not succeeded, this Week will be a very proper Time for it.

Let the Piece of Ground selected for them be in a shaded Part of the Seminary; and let them be carefully set, closing the Earth well about them; and watering them from time to time till the Spring Rains come on.

They will root freely enough; and in two Years will be fit to plant out where they are to remain.

In the Time of their Growth in this Place, the Gardener should trim them up for the Purposes they are intended to answer.

If they are to be planted free in Borders, it will be best to destroy the lower Shoots, that they may rise with a Head, and a naked Stem: and if they be intended for planting against Walls or Pales, they must be train'd flat, encouraging the Side Shoots, and stopping those which grow forwards.



S E C T. III.

POMONA, or the FRUIT-GARDEN.

THIS Week should be finish'd the dressing of Espalier Hedges. All the Branches that have been properly train'd for them, must now be ty'd down in the due Places; and this must be done with Care not to hurt the Course of their Sap by the Tightness, nor to suffer them to rock with the Wind; for in that case they will rub against the Wood-work, and wound themselves.

Fruit Trees of every kind may be planted now; and in Places where the Ground has a Clay Bottom, or for any other Cause suffers the Wet to lodge, this is a securer Season than Autumn: for as the Roots are during Winter nearly in a State of Rest, the Wet lodging about them will destroy them.

This Week let the careful Gardener, if the Season be mild, graft his Pears.

The Stock for this Purpose is an Article of great Consequence, and not enough either regarded or understood.

N^o 24.

There are three Kinds of Trees commonly raised for Stocks for grafting of Pears: these are, the Pear itself, the Quince, and the common Hawthorn.

Some use one or other of these indifferently; others prefer for all Purposes one particular Kind: but these general Maxims are both wrong.

Let our Gardener understand the Nature and Properties of all the Kinds, and then use which suits his Purpose.

The Pear Stock is the freest Grower of them all, the Quince next; and the Hawthorn slowest of all.

From this is derived the first general Direction, which is, that where other Circumstances are equal, the Pear Stock is fit for a Standard Orchard Tree, the Quince for a Wall Pear; and the white Thorn for a Dwarf.

But after this Consideration of their Manner of Growth, we are to enquire what Effect they have upon the Fruit.

The

Feb. The Pear Stock makes the Fruit incline to Softness and Mellowness; the Quince Stock gives a Firmness and Roughness to it: and the Hawthorn, though not remark'd by Writers on Gardening, is apt to make the Fruit hard at the Core.

For this Reason the Pear Stock is best suited to the harder Kinds of Fruit; the Quince Stock to those of the soft melting Kind: the Hawthorn will be found less valuable than either, and only suited to those baking Pears whose Core is taken out.

For the raising a soft Pear for a Dwarf Tree, or an Espalier, we shall direct the Quince Stock,

and let this be budded, or grafted close to the Ground. Feb.

All the melting Pears may be thus propagated very successfully; but the Rule should be universal against the breaking Kinds, because in dry Summers they always are stony at the Core when this Stock is used.

The breaking Pears never succeed so well as when they are grafted upon Stocks raised from the Kernels of the melting Pears.

The Grafts must be very well secured by Clay; for the Season of drying Winds is coming on; and if that be not well done, all the Labour is lost.



S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

THIS Week let the Gardener begin his sowing of Cabbages and Savoy for Winter Service. A Fortnight hence would be a better Time to put in Seed for the large Crop, but it will be very proper to begin with a small Parcel now, because they will come in at so acceptable a Time.

Let him remember what we have said concerning the repeated planting and sowing of Pease and Beans; and let the same Practice, though in a less Degree, be transfer'd to this Part of the Ground.

Let him dig up the Piece he intends shall serve for the Purpose; and this Week sow a small Quantity in the warmest Place; next Week let him sow more, and so on till about three Weeks hence he sets in the last Parcel.

Let him spread over this Piece of Ground a good Quantity of old rotted Dung from a Melon Bed, and a little Coal-ashes. Let him dig and work these well in; and when he has levelled the Surface for a small Part of the Ground, let him sow some common white Cabbage and Savoy Seed: the next Week it will be proper to sow a second Parcel, larger than the first, and the third the Week after, the rest. But as all these require the same Management, we shall take this Opportunity of laying it down in a plain and familiar Manner.

In about a Month from the Time of sowing, the Plants will be of a Height for their first Removal; and this must be successively done, in the same Manner, with regard to the several Crops.

Let a Piece of Ground be dug up when the first are of due Bigness, and let it be in a shelter'd and shaded Place; let Lines be drawn along, and across at four Inches and a half Distance, and in the Centre of every Square made by these Lines place one Plant. Let it into a

handsome Hole, and draw the Mould properly up to the Stem. When they are all in, let them have a gentle Watering.

As soon as they are planted, let a Piece of Ground be dug up for receiving them finally, where they are to grow to their full Bigness.

The Quantity of Ground for this Purpose is to be determin'd by the Number of Plants, for they should stand a Yard distant every Way. Let not this surprize the Gardener: we know it is more than he allows, but we know also, that it is not more than sufficient.

In Places where Cabbages are raised for Sale, Ground may be spared by planting them between the Rows of other Crops, as Artichokes, and the like; this may be learn'd in every Gardener's Ground about *London*: or where there is want of Room, a Practice of that kind must be admitted elsewhere; but in no case let the Gardener attempt to encrease the Value of his Crop, by placing more than we have mention'd in this last Piece of Ground; for he may be assured, that if he plant thirty in the Compass, wherein, according to our Method, there should stand only twenty, the whole thirty will not be worth half the other Crop which has been allow'd free Room for the Fibres to spread; and has been set in a Ground prepared, as we are about to direct, to receive the Plants.

The Quantity of Ground being fix'd upon, according to the Number of the Plants; let the Dung of an old Melon Bed, and some fresh Pasture Earth, about equal to the Dung in Quantity, be scatter'd over it, and dug well in.

When it is well mix'd and broke, let the whole be thrown up in Ridges, and lie in that Manner three Weeks. Then let the Ridges be levelled, and the whole well wrought. Let it lie

Feb. lie one Week more to settle, and then let the Plants be taken up, and regularly planted at the Distances we have directed, by drawing Lines for that Purpose: here let them have a gentle Watering; and every Evening repeat it till they have very well taken Root.

The Season by this Time will be advanced toward *June*, and the Earth will grow dry: it is a large Spot to water constantly; but there is a Method of Culture greatly preferable.

The Requisites for the good Growth of these Plants, are Freedom from Weeds, and a due Quantity of Moisture at the Roots: both these may be given at once by digging between them; and they are by these Directions placed at such a Distance, that this can be done with great Ease.

The common Method of managing them is by hoeing the Ground to destroy the Weeds; and watering them as they require it; but this latter Method being very troublesome, is often neglected, and the Plants starve accordingly.

Every one knows that the Effect of digging is a radical Destruction of Weeds; that the Hoe only cuts off their Tops, but the Spade takes out their Roots: this Advantage therefore is so great, that were there no other it very well answers for the greater Trouble: but we are to acquaint the Operator, that this digging gives Moisture to the Ground.

This is, perhaps, new Doctrine to the Gardener, but it is not the less true: there is no contradicting Experience. There falls in the Night a Moisture upon all Ground, and that which is dug and well broken, receives it the most freely, and detains it longest.

The Dew that falls upon a Piece of Ground with a hard Surface, does not penetrate half an Inch; and is dry'd by the Sun and Wind in an Hour in the Morning; whereas that which falls upon a Piece where the Surface is free and open, penetrates eight or ten Inches, and lies too deep to be blown off by the Winds, or thoroughly reach'd by the Sun. This the ingenious Mr. *Tull* found in the Field; and we have experienced it in the Garden.

That Gentleman says,* he always found that in the driest Weather good Horsehoeing (which of all the Field Operations comes the nearest to that of the Spade) always procured Moisture to the Roots.

We have given the Reason, and the Effect is evident. The Damps of the Night penetrate in this well broken and open Ground, and lodge about the Roots where the Sun's Heat that begins to raise them up, at the same Time warms them about the Roots, and sets the Plant to growing.

Beside this, there is the Advantage from digging we have before explain'd in its breaking off the Roots at their Extremities; whence new Fibres are thrown out innumerable, and have a free Earth to shoot in.

For all these Reasons, we advise the Gardener who follows these rational Instructions, to dig with the Spade instead of hoeing between the

Plants; and we can assure him that once performing this Operation, will answer for three Times of the other.

Let it be repeated occasionally as the Weeds appear, and as the Ground shews Dryness; and every Time the Earth is thus dug, let some fine Mould be drawn up in a little Hill about the Bottom of every Plant, two Inches higher than the general Surface.

Beside this, we shall advise the Gardener in dry Seasons to allow some Water to the Plants: they will thrive the better for it; and one Watering will thus answer in the Place of five.

This Work of digging being at proper Intervals repeated through the Summer, the Gardener will early in Autumn find his Reward.

The first sowing of the Cabbages will be fit to cut; and himself and the Family will be equally surpriz'd at their Bigness in the Heart, and at their delicate Flavour.

From this Time he is to go on cutting them as they ripen, and as they are wanted. At the Approach of Winter he must draw up the Mould about the Stalks of those which remain; to prevent the Frost from entering to the Root; and he will thus keep them alive, and in Vigour, during the whole hard Season.

This Direction at large we have thought proper to give concerning this useful Plant; and the ingenious Workman will find it may be apply'd to many other of the large growing Kinds with the same Advantage.

Toward the End of this Week let the Gardener look to those Beds of the finer Kind of Lettuces, the Cos and others, which, if sown according to our Directions in the preceding Numbers, will be now ready to transplant.

For this Purpose let a Bed of rich light Mould be well dug; and mark'd by Lines longways and across, into Squares of a Foot Breadth.

Into every one of these let there be one Lettuce set; and let the Ground be carefully drawn up, and closed about the Roots. After this let them every Morning have a gentle Watering; with Water that has stood all Night in the House.

In the taking up these from their Original Bed, let as many be left as the Ground can well maintain for growing to their Bigness; and let the stoutest Plants be left for this Purpose.

In the taking up the others, let these be left at a Foot Distance every Way, and let the Ground be laid smooth between them. After this they must have a gentle Watering every other Morning; and having had no Check from a Removal, they will grow to their due Size very quickly; and come in at an extremely valuable Time.

When these are all cut, the transplanted ones will just come in; and thus a Succession will be kept up without any Stop.

The Care of our *August* Beans must be continued as we have before directed: and we shall here, for the Service of those who shall hereafter practise that Method, insert the Practice of a worthy Correspondent, by which he has been accustom'd to bring them to Perfection.

* Horsehoeing Husbandry, Ed. 3. Page 52.

Feb.

To the PROPRIETORS of the COMPLETE BODY
of GARDENING.

GENTLEMEN,

I HAVE read Mr. STEPHENSON'S Method of managing Beans sown in August: I will assure you it is a Secret; for I have not seen it practis'd in above three Gardens, and even they had their Knowledge first from me. I fully purpos'd to reveal to you my Way of managing them; but Mr. STEVENSON has deliver'd my former Method exactly.

I shall now add something to it, and inform you of a Way that I have contriv'd of late to preserve them thro' the Winter, which I find to be better than by Glasses.

I prepare a Reed-Hedge, in all Respects like that I use for Auriculas, Carnations, Cauliflower Plants, &c. only this is moveable, as I call it; that is, this Hedge moves at the Top, being made into Pannels ten or twelve Feet long.

To every Pannel there are two Iron Hinges at the Bottom, for it to move on. Then about five Feet from the Bottom of the Hedge, that is, about a Foot from the Edge of the Border under the Hedge, and exactly between the Pannels; that is, against where the Pannels part, there is a strong Support fix'd perpendicular.

When the Hedge is at its proper Elevation, the Top of it comes close to these Supports: but then there are Pieces of Oak, two Inches broad, and three quarters of an Inch thick, with Holes bored in them at proper Distances: these Slips are fixed at the Top of the Reed-Hedge, so as to come on each Side of the Support. There are Holes bored also in the Support, for good strong Pins to go thro' the Slips, that are to make them fast to the Support, and to stay the Hedge.

The Slips ought to be so long as to reach down from the Top of the Hedge when it stands perpendicular to the Supports. Now it is easy to conceive, that by the Help of these Slips the Hedge may be fixed at what Elevation you please.

I put the Beans into the Ground in August, in an open Spot of the Garden, and transplant them into this Border when they have got three Inches

high, observing to water and shade them till they have taken Root. Feb.

The Hedge may remain perpendicular, for them to receive the Dews, until the Cold comes on, so as to be too sharp for them: only in heavy Rains it should be lower'd, and Mats hung before them, to keep off beating Showers: for the Mould on the Border should be got pretty dry before Winter, that the Frosts may not have too much Power on it.

I set the Plants in Rows, from the Hedge to the Front; three Inches Distance in the Rows, and two Feet Row from Row: and I throw some Pulse, or some other short Covering, between the Rows in Winter.

Tho' these Hedges over-hang, yet beating Rains will come at the Plants if not prevented by the Mats; and this should not by any Means be neglected, neither for these, or Auriculas, Carnations, or Cauliflower Plants, or any thing that is planted under these Hedges; for I observe Wet to be as great an Enemy as the severest Cold.

In the Spring these Hedges will require to be set perpendicular, for the Plants to receive Rains and Dews, and for Room for them to grow. This is all the Difference between Mr. STEVENSON'S Method and mine. The cutting of them down, and every thing else, being the same as in his.

I am, Sir,

Your most humble Servant,

T. BARNES*.

Now let the World judge between us and the Author of the *Gardeners Dictionary*: Could there be any thing improper in our advising from Reason, what has been, tho' unknown to us, brought successfully into Practice? Or what must be the Judgment of that Person in his own Business, who declar'd a Thing impracticable, which he here finds a Country Gardener has several Years practis'd himself, and taught his Friends successfully?

* Gardener to William Tamson, Esq; at Elsham, near Brigg, in Lincolnshire.

E D E N :

COMPLEAT BODY of GARDENING.

NUMBER XXV.

For the Latter End of FEBRUARY.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and curious Plants now in their Perfection.

I. DIAMOND MESEMBRYANTHEMUM.

Feb.

Plate
XXV.
Fig. 1.

WHILE this was new in the European Gardens, none caus'd more Admiration; or more worthily: a large Plant spreading its Branches every Way in a wild and pleasing Irregularity; and covered, Branches and Leaves all with Gems, might well attract the Eye, and fill the Mind with Wonder. Custom and Familiarity have render'd it less regarded by the common Observer; but he who searches into the Causes of Things, must understand it more before he ceases to wonder.

The Spangles with which it is adorn'd; which cover it with a glossy Whiteness in the Shade, and glitter in the Sun, have caus'd it to be call'd after various suppos'd Resemblances; and even its proper Generical Name has not been settled till of late Time; LINNÆUS having established the distinctive Characters.

The Vulgar call it the *Ice Plant*. In the Authors who first named it, 'tis entitled the *Silvery Ficoides*; and our Gardeners of later Time, from its full Lustre under an improv'd Culture, have nam'd it the *Diamond Ficoides*. In *Holland* it is call'd the *Crystalline Ficoides*.

DILLENIUS names it *Mesembryanthemum crystallinum plantaginis folio undulato*, in his Account of the *Eltham Garden*. And LINNÆUS, to the same

Numb. XXV.

Generical Name, adds, *foliis alternis, ovatis, obtusis undulatis: Mesembryanthemum*, with oval, obtuse, and undulated Leaves, plac'd alternately.

The Root is hung with innūmerable Fibres.

The Stalks spread themselves every Way; leaning upon the Ground, and forming; when the Root is well nourish'd, a Circle of very considerable Expanse; from four to six Foot in Diameter.

The Stalks themselves are thick, rotund; and full of Juice; and every one sends Branches off in great Number and with perfect Irregularity.

The Leaves are oblong, thick, juicy, obtuse at the End; and undulated; and often rais'd at the Edges. In those Plants which flower freely they are smaller; in such as do not, they are three Inches long, and two in Breadth.

The Colour of the Stalks and Leaves is a very fine green; and they are covered thick with shining Particles, resembling, according to the different Vigour of the Plant, and the Light wherein it is view'd, Spangles of Silver, Flakes of Ice, Fragments of Crystal, or Sparks of Diamonds. They are perfectly transparent and colourless; and of uncertain Form. These give a glorious Lustre to the Plant; and often there is, beside this, some Variety of Colouring, even before it flowers;

Feb.

Feb. the Places where the Leaves are inserted having a Tinge of Purple; and the Tips of many of the Leaves being brownish.

The Flowers are numerous, and of a very singular Appearance. They rise from the Stalks by very short Pedicles, and are in Colour white, with a faint Tinge of Purple. This is principally seen on the Extremities of the Petals, and on their under Side; and it goes off as the Flower attains its full Maturity. The Tinct is best seen on the Head of the Bud; and here it is usually of a bright purplish Crimson.

No Flower demands more than this the Attention of the Botanical Student, or more deserves his Notice.

The Cup is form'd of a single Piece, divided by five Cuts at the Edge.

The Petals, which compose the Body of the Flower, are innumerable: they stand in several distinct Series, and are long, narrow, undulated, and sharp-pointed; and on tracing them to the Base, their Bottoms are found to coalesce and unite into a kind of Ring; so that they may, if the Student please, be call'd so many Segments of a *monopetalous* Flower.

In the Centre stand numerous Filaments, very slender, and crown'd with incumbent Buttons: and in the Midst of them appear five Styles. These have their Origin from five obtuse Angles, which terminate the Rudiment of the succeeding Fruit, plac'd below the Receptacle of the Flower.

The Fruit is a round fleshy Capsule, with a Dent; mark'd with five Rays, and containing numerous roundish Seeds.

Such is the Structure of this most singular Plant: the Class is easily determin'd from the Origination of the Filaments: these we have seen are numerous, and they will be found to arise from the Inside of the Cup, not from the Receptacle: the Plant is therefore one of the *Icosandria*; and the Number of the Styles refers it to the *Pen tagynia*.

Culture of the DIAMOND MESEMERYANTHEMUM.

The Plant is a Native of *Africa*, and thrives there in a mellow and light Soil. This we should imitate, and then its Culture is easy.

It must be nurs'd with Care in Spring, for the Colds else will kill it; but soon after *Midsummer* it may be brought out into the open Air, and open Ground. This last is the frequent Practice of our Gardeners, but it is not what we advise: the Plant that Way comes into Beauty with a Multitude of others, and fades with the first Frosts. We shall propose a Method by which it may continue, thro' Winter, an Ornament to the Greenhouse; the more valuable for the Time when there are so few Things in Perfection.

This is the Season for raising it; and let the Gardener take the following Method:

The Seeds ripen freely with us when manag'd properly; and these grow freely. The Plant is an Annual, and is to be rais'd from them on a Hot-Bed. Let them be scatter'd with Care

upon some rich Garden-Mould, laid four Inches thick upon a common Bed of Dung; and let a quarter of an Inch of the same Mould be sifted over them.

As soon as they are put into the Ground, let the following Compost be made for the Plants:

Mix a Barrow of rich Meadow-Earth, a Bushel of Pond-Mud, and a Peck of old Cow-dung: add to these a Peck and half of coarse Sand; and blending the Whole well together, throw it up in a Heap to the Weather.

When the Plants rise let them be very gently water'd; and as soon as it can be seen which are the strongest, let the weaker be pull'd up, leaving only as many as are intended to be rais'd, at due Distances. Here they may stand to gather a little more Strength, and they must then be remov'd into separate Pots.

Let as many small Pots be prepar'd as there are Plants; and let an Oyster-shell be laid over the Hole of each, to keep it open. Then let them be fill'd with the Compost, and the Plants one by one taken carefully up and set in them. Give them a gentle Watering, and set the Pots up to the Rim in a Bark-Bed, shading them with Mats till they are thoroughly rooted.

If there be not a Bark-Bed in Readiness, a common Hot-Bed of Dung will do; but in this Case, the Pots must be remov'd from one to another, as the Heat declines: in the Bark-Bed it keeps up the whole Time these and such other Plants need be preserv'd in it; and this is the great Advantage Bark has over Dung.

In this Bed they are to be water'd at Times; and as the Season grows more mild they may be inur'd to the Air.

In the Beginning of *July* they may be taken out of the Bed, and plac'd among the Greenhouse Plants.

Here begins the various Management; and it will be proper to give them all the Opportunities of Beauty and Excellence of which they are capable, by treating them in the different Manners.

At this Time of their taking from the Bed, let some be kept for flowering, in the usual Way; others planted for spreading and shewing the Beauty of their Leaves; and others manag'd for living all the Winter.

Let the first Kind be treated as other Greenhouse Plants, and no otherwise. Then let those which are intended for spreading, be planted in a warm and well shelter'd Place in the open Ground, allowing them a large Space to cover, and planting them in some of the Compost, thrown into a Hole of the Bed for that Purpose.

While those treated in the usual Manner flower abundantly, these will attain many times their Size, but produce few Flowers, or perhaps none.

Those Plants intended for Winter must be taken up, and set in somewhat larger Pots, shaking off a good Quantity of the Mould from their Roots. They must be water'd and shaded till they have taken Root; and this must be repeated once in sixteen Days.

At

Feb. At every Time of transplanting, those Branches which have Flower-Buds upon them must be taken off; and by this Means the Plants will be put backward more and more at every Plantation.

At the Approach of Winter they must be taken

into the Greenhouse, and transplanted no more: Feb. they will then settle themselves for flowering: but it will come on slowly; and they may be kept all Winter.

2. PROLIFEROUS DATURA.

Plate XXV. Fig. 2. Beauty and Singularity unite in the Flower of this Plant, and both in a very great Degree. We admire the Two-in-a-hose Cowslip, and with Reason, for there is great Prettyness in it; but with how superior an Attention should we regard this, which, with a Colour vastly preferable, is more than forty times its Bigness.

Let not the Botanical Reader suppose it a Variety of the common Thorn-Apple: the Flower of that is white, and its Fruit oblong: this is indeed a Variety, but of another and much more elegant Species, whose Flower is purple, and its Fruit round.

BAUHINE and the old Writers describe this in the single State of the Flower, under the Name of *Solanum pomo spinoso rotundo, oblongo flore*. Some, *Stramonium fructu rotundo*. In the elegant Variation of which we write here. ALPINUS and VESLINGIUS call it *Datura*. This Name LINNÆUS adopts for the Genus, and adds, as its Distinction in this Species, *pericarpis spinosis nantibus globosis: Datura*, with round prickly drooping Fruit.

The Root is long, thick, divided, reddish, and of an ill Smell.

The Stalk is robust and upright, but divided in a very beautiful Manner into Branches.

It will grow, with good Culture, to five Foot in Height; and spreading its Branches every Way will form a round and regular bushy Head; which, when cover'd with its most elegant Flowers, disputes the Prize of Elegance with most of the Vegetable Kind.

The Colour of the Stalk is naturally purple at the Bottom; and upwards also, and throughout the whole Course of the Branches, its natural pale green has a purplish Tinge.

The Leaves are numerous, singular, and not without their Beauty. They have robust Footstalks: they are oblong, and sharply serrated. Their Colour is a blackish green; and they have purplish Veins.

The Flowers are very large and elegant: they rise one within another, and are on the Outside of a glowing Purple, mix'd with Crimson; and within of a pure and perfect snowy Whiteness. This Rise of one Flower in another is a Luxuriance of Nature; but 'tis not, as in many Cases, the mere Effect of Culture.

The Plant is wild about the *Cape of Good Hope* in this elegant and conspicuous State, and is figur'd so in the *Hortus Malabaricus*.

A Cup receives the Bottom of this Flower, of

an oblong Shape; tubular, and form'd of a single Piece, swollen at the Bottom, mark'd with five rising Angles upwards, and at the Rim divided into as many Segments. 'Tis peculiar in this Cup, that it is neither permanent, nor deciduous entirely. It falls, as if cut off horizontally near the Base, leaving a rounded Piece behind; which we have figur'd adhering to the Fruit.

The Body of the Flower is form'd of a single Petal, and is of the Funnel Shape: it is a Term us'd by the Botanical Writers for many Flowers; but there is not one with which it agrees so well as this. It is narrow at the Base where receiv'd into the Cup, and from this Part it swells out into a vast Hollow.

There run several Ribs along the Body of the Flower. Five are most conspicuous; and at the Rim it is cut in five Places, or when luxuriant into many more, but five are principal. The Segments grow narrow to the Point, and end in a kind of crooked Tails.

This is the simple Flower; and the Variety of Purple and Snow-white in this; give it enough of Beauty; but in the most elegant State it is prolific: another Flower rises from within the Hollow of this; as this from the Hollow of the Cup: and in Shape is perfectly the same with the other.

Nature, when she thus becomes wantonly profuse, fixes herself no certain Bounds: two, three, or four Flowers will sometimes rise from one Cup thus one within another, and add still to the Elegance.

To know the Class of the Plant, its Parts of Fruetification must be examined; and these are always most distinct in the simplest Flower. Let the Student chuse such a one; and tearing it open he will find within, five pointed Filaments, terminated by oblong, obtuse, and compress'd Buttons; and among these a single Style, with a Top form'd of two Plates.

The five Filaments shew the Plant one of the *Pentandria*; and its single Style declares it one of the *Monogynia*: the fifth Class of LINNÆUS and its first Section.

Culture of this DATURA.

It is a Native of *Africa* and of the *East-Indies*. The Seeds ripen freely, and it must be rais'd from them in a Compost suited to it, in Comparison of that Soil wherein it thrives best in a State of Nature. It is found in low Grounds, in a rich black Soil, where rotted Leaves have made

Feb. made the Ground mellow, and where it is not fully open to the scorching Sun.

To imitate this Soil, let our Gardener mix equal Parts of rich Meadow-Earth and River-Mud; and add to this a little rotted Cow-dung. This being ready, let the Seeds be sown.

These succeed best if brought from *Africa*; but with due Care the Plant will ripen them with us; and this should never be omitted, lest we lose the Means of a Supply.

Let the Seeds be sown upon a common Hot-Bed early in Spring, and rais'd with the usual Care to the Time of a second Transplantation; but let them be then remov'd, not into another Hot-Bed, but each planted in a separate Pot fill'd with the separate Compost, and set up to the Rim in a Bark-Bed.

These early sown Plants are for ripening the Seed; but let some others be rais'd later, to be transplanted often; and kept back in the flowering, that they may be a Glory to the Greenhouse during Winter. The Management of all is to be the same.

They must be shaded till they have taken Root, and water'd frequently; and, after this, the Noon-

Day Air must be admitted, by raising the Glasses more and more largely by Degrees; and in the Heat of Summer they must be set out in the open Air.

Here the Earth must often be stir'd at the Surface of the Pots; and they must every Day be water'd.

Those which flower first must be watch'd with Care; and the first open'd Flower mark'd for Seed. This is not a known Practice, but I have found it very successful. The Seeds of this Flower are always the strongest, and raise the most vigorous Plants.

Let this Plant be watch'd, and not suffer'd to exhaust its Strength by too much flowering; and let the others be encourag'd to flower, by taking off the faded Blossoms, not letting them be set for Seed.

At the Approach of Winter the Plants must be remov'd into the Greenhouse, and scatter'd here and there among the rest; upon the Principles we have establish'd for placing the Pots: here they will flower one after another, and will amply return the Pains taken to preserve them.

3. N E P E N T H E S.

Plate XXV.
Fig. 3.

Reader prepare for Wonder! The Plant we introduce to you in this Place exceeds all else in Singularity; and they may well be excus'd who treated the first Notice of it as an idle Tale.

Our Voyagers first gave Account of it, and their uncouth Descriptions were not credited: but when Men of better Knowledge saw it growing, when Specimens were receiv'd in *Europe*, and its Seeds rais'd Plants in our Gardens, those who had disbeliev'd it, hung their Heads, and wish'd to be often so put of Countenance.

Our first Knowledge of it was under the not strange tho' unscientific Name of the Wonderful Plant, *Planta mirabilis*: so it stands character'd in the *German Ephemerides*.

BURMAN, in his Account of the *Ceylon* Plants, calls it *Bandura*. Our PLUKENET, *Utricularia vegetabilis Zeylanensum*.

LINNAEUS, in his *Hortus Cliffort*, names it *Nepenthes*; and he preserves this Title in his later Works. There needs no Epithet of Distinction, for there is no other Species.

It has been call'd by others, *Gentianæ Species*; and *Priapus Vegetabilis*. Its *Indian* Name is *Auramatico*. FLACOURT has describ'd it under this.

BREYNIUS may lead the Student into an Error, imagining there are more known Species. He calls this *Nepenthes Zeylanicum flore minore*: but what he calls *Nepenthes flore majore*, is the *Saracena*.

This we have describ'd in a preceding Number; and the Student will see presently the Plants are utterly distinct in Genus. There needs there-

fore no Addition to the plain Word *Nepenthes* in the Name of this.

The Root is thick and brown, furnish'd with many Fibres of a reddish Colour: of an insipid Taste, with some Astringency.

The Stem is two Foot high, round and firm, and is in many Parts ting'd with a faint Purple.

The Leaves have no Footstalks: they are oblong, moderately broad, highly rib'd, and furnish'd each with a kind of Vessel at its Extremity.

The Leaf itself, which is narrow at the Base, grows broader toward the Middle, and thence decreases gradually; but where it might be expected to terminate, the long Point it is continu'd in a kind of Horn. This hangs down for a considerable Length, swelling very gradually in Thickness, and from this lowest Part turns up again, expanding into a hollow Vessel; three Inches long, and half an Inch in Diameter, terminating in a large Opening, which is cover'd with a kind of Lid, all of one Piece, and ending in a narrow slender Tail.

Such is the amazing Structure of this Leaf and its Appendage: the Use of so singular a Construction we shall examine hereafter: we are now to proceed to the Examination of Characters of the Plant.

The Flowers terminate the Stalk in considerable Numbers: they are placed on short Footstalks, and their Colour, when in Perfection, is yellowish, or greenish; sometimes they are redish, and sometimes whitish.

What

Feb. What makes this conspicuous Appearance is the Cup, for there are no Petals. This is form'd of a single Piece, but is divided deeply into four oval Segments: these stand wide expanded, and mimic so many Petals by their Colouring as well as Form, but they remain to defend the Fruit.

In the Centre rises a short Style, simple in Form, and terminated by an obtuse Top; and upon its Summit are placed four Filaments, so very short, that they are only distinguish'd by their Buttons.

The Seed Vessel is columnar, oblong, angulated, and mark'd by four Ridges. These shew the joinings of four Valves, of which it is compos'd, and it opens in four Places: the Seeds are numerous and light.

From the Situation of the Filaments, the Student will know he is to determine the Class to which this Plant belongs in the LINNÆAN System. They grow upon the Style. This is the Mark of the *Gynandria*; and their Number shews the Plant to belong to that Section, which comprehends the *Tetrandria*.

The Reader is impatient to return to the Account of those strange Appendages, which are continued from the Extremities of the Leaves.

They are so many Vessels containing a clear, wholesome, and well tasted Water, which has saved the Lives of many perishing in those hot and dry Climes with Thirst.

These Vessels from the Beginning turn upward, that they may hold the Liquor; at first their Colour is a whitish green, afterwards they become yellow, and in the End purplish. The little Piece falls over them very close while small, but when they are of the full Bigness, and replete with the Water, they gape; and in the End the Weight of the Liquor bears down the Vessel; it runs out, and then the Part fades.

The Liquor contain'd in these strange Vessels is Water, little or nothing alter'd by the Plants: and the Vessels themselves are the dilated Extremities of secretory Glands.

Things which appear most wonderful become familiar when a continued Observation leads the Way to them. Glands of this Kind are very common in Plants; tho' rarely so conspicuous. They cover the whole Stalk in the Diamond *Masembryanthemum*; in the *Urena* they are situated on the Back of the Leaf, and in the Sundew on its upper Surface. All these secrete a watery Fluid, but 'tis in few Instances that is detain'd in a kind of Vessel.

We see it so, however, in the Leaves of the *Saracena*; in the *Maregravia* in a kind of Vessels raised from the Centre of the Umbel; and in this Plant, not in the Leaf itself, but a peculiar Appendage. This is the LINNÆAN Doctrine, and this Nature confirms.

Where Moisture is redundant, whether Nature affords, or injudicious Labour give it in that Quantity, it must, and it will be discharg'd.

Nº 25.

Feb. We see the Sundew, a minute Plant, throw it out in big round Drops. In the *Æthiopian Calla*, when over supply'd with Water, the fine and slender Extremities of the Leaves sweat out the Load in continued Drops. This COMMELINE saw in *Holland*; as well as we in *England*; and in the *American Harts-tongue* the same Incident propagates the Plant.

The fine and small End of the Leaf is there bent to the Earth by the Weight of the Drop it gradually secretes: another and another follows, as it remains in that Situation; and the Plant being full of Life takes Root there, and produces a new Stock, itself fix'd to the Earth by Roots at each Extremity.

These are known Instances of a Secretion of this Kind, tho' not generally understood; and this in the *Nepenthes* is little more.

The Plant grows in thick Forests, where its long Fibres supply it well with Water, and no Sun comes to exhale it.

At the End of its Leaves are placed Glands, as in the others; but here they swell with the increasing Liquor; and furnish a Supply, so design'd by Providence, for the Preservation of perhaps more than the human Species.

The Quantity produced on a single Plant is sufficient to quench the Thirst of the most despairing Traveller; and by the Marks of Teeth upon the faded Vessels, it is evident Beasts often supply their Wants at the same plenteous Source.

Culture of the NEPENTHES.

The Plant lives only in thick Forests, where the Soil is mellow, rich, and light.

This must be our Guide in preparing a Compost for its Reception; and the Warmth of its native Climate declares that it will require our best Care in the Stove. We bestow it on many Things less worthy, and let it not be spared for this.

The Seeds should be procured from *Ceylon*, or other Places where the Plant is Native: and for the Soil, a Mixture should be made of the most rich Garden Mould, with one-third Part Earth from under a Wood-pile; with a little Marle, and about as much harsh Sand. A Quart of each of these last Ingredients will be enough for a Bushel of the whole.

This ready, let the Seeds be carefully sown upon it in two or three Pots, sifting over them a Straws-breadth of the same Compost.

Set these Pots up to the Rim in a Bark-bed of moderate Heat; and refresh the Mould, if it grow dry, with frequent gentle Waterings.

When the young Plants appear, water them also gently, and frequently. Pull up the weakest; and leave only four or five in each Pot: here let them get some Strength, and then prepare as many separate Pots for their Reception.

Fill these with the same Compost; and place upright in each one of the Plants.

4 F

Set

Feb. Set these Pots up to the Rim in the Bark-bed, and shade them with Mats drawn over the Glasses till they are well rooted: after this let them have a little Air in the Middle of mild Days; and when

they have stood about three Weeks in this Place, remove them into the Stove. Feb.

Whether they flower or not is of little Consequence, the Leaves afford sufficient Wonder.

4. AFRICAN DROSERA.

Plate
XXV.
Fig. 4.

We propose here to the Curious a little Plant, singular in its Kind for a Garden Ornament; and though a Native of the warmest Parts of *Africa*, capable of bearing unhurt our Climate in a full Exposure.

Most who have treated of the *African* Plants have named it. HERMAN calls it, *Ros solis folio lato*: and RAY, *Ros solis foliis praelongis*.—LINNÆUS, who has adopted for the Genus the Name *Drosera*, adds as the Distinction of this Species, *foliis lanceolatis, scapis radicatis*: Lanceolate leav'd *Drosera*, with the Flower-stalk naked from the Root.

It is not unlike in the general Form to the Sundews of *Europe*; but larger, and more conspicuous than them all; and of a finer Colour.

The Root is fibrous, and redish.

The Leaves are numerous, and very elegant. They rise from the Root by a narrow Base, and at the Height of an Inch begin to swell out into Breadth. They are largest in the Middle, and they terminate in a sharp and fine Point. The universal Tinct is red, a Mixture of a brownish Cast obscures the full Glare of the Colour, but there is with this somewhat of crimson and of purple.

They are cover'd with numerous long and stiff Hairs: these are of a tawney redish; and they are most frequent at the Edges.

Upon the Surface of these Leaves stand large round Drops, of a transparent Fluid, reflecting the Colour of the Hairs; and glittering like Gems.

The Stalk which supports the Flowers rises with these, and exceeds them considerable in Height.

The Length of the Leaves when in full Perfection, is about five Inches, and their Breadth half an Inch; but this Stalk will grow to a Foot in Height; and rises tolerably erect and firm. Its Colour is a purplish brown; and it has neither Leaves on it, nor Branches.

The Flowers grow in a short Spike at the Top, eight or ten, not more; and they are small. They do not open freely; but when they approach to it, their Milk white Colour affords a fine Contrast with the red of the whole Plant.

The Seed Vessel is of an oblong Form, and contains in a single Cell many small Seeds.

Each Flower has its separate Cup, form'd of a single Piece, dented in five Parts at the Edge; and of a pale green Colour, ting'd with red.

The Flower is form'd of five Petals; and these throw themselves into the Shape of a Bell. In the Centre stands five Filaments, short and slender, and among these rise five Styles. This shews the Plant to be one of the *Pentandria* of LINNÆUS, the fifth Class in that Author's System; and one of the *Pentagynia*.

Culture of this DROSERA.

It must be raised from Seeds; and that it may be we have Experience. Mr. Sherrard from Seeds pick out of the Heads of Specimens, of the Plant from the *Cape*, raised several promising Roots upon a Bog.

'Tis thus we must endeavour its Culture. Naturally, like our Species of Sundew, it lives upon the Surface of Bogs, trembling with the least Motion, and supported by a wet Mud. There it spreads out its shining Leaves in wild Profusion; and mocks the hottest Sun: the Liquid Gems that decorate them never evaporating without fresh Supplies.

It is only in Gardens where there is damp shelter'd Ground, that we advise the propagating this Plant; there it will rise with the *Saracena*; and some others we shall occasionally name hereafter; and give a peculiar Excellence to Spots of Ground before disgusting and offensive.

The Method must be to procure the Seeds from *Africa*; and to sow them early in Spring, in such Ground, just opening the Surface to receive them. They will here shew at least their Leaves, and these have sufficient Beauty: not improbably they will also flower, and propagate themselves.

The pearly Drops upon the Surface of the Leaves in this Plant, and in our common Sundew, are Secretions of the same Nature with the Fluid, which fills the strange Vase of the *Nepenthes*: the Work of Glands situated for that Purpose, to discharge redundant Moisture.

5. PEARL



Diamond. Mesembryanthemum



Proliferous Datura



Nepenthes...



African Drosera



Pearl Aloe



The Sensitive Plant

Feb.

Feb.

5. PEARL ALOE.

Plate
XXV.
Fig. 5.

The Gardeners know by the Name *Pearl Aloe*, two or three different Species; but when that Title is used without Addition, it should be understood to mean the Plant whose Figure we have given from Nature in Plate 25. and whose distinctive Characters we are about to explain.

COMMELINE has called this Species *Aloe Africana folio in summitate triangulari*. VAN ROYEN, *Aloe foliis ovato subulatis acuminatis tuberculis cartilagineis undique aspersis*: and LINNÆUS in his last Work, *Aloe floribus sessilibus bilabiatis, labio superiore erecto inferiore patente*. Aloe with bilabiate sessile Flowers, the upper Lip erect, and the lower patent. The Word sessile is scarce applicable to it, and the preceding Name which very happily describes the Form of the Leaves, is preferable.

The Root is thick, and variously divided.

The Leaves are very numerous, extremely singular in Form, and whether we regard their Shape or Disposition, full of Beauty.

They rise cluster'd together, and display themselves variously, some nearly upright, some flat upon the Ground, and others at different Angles.

All are of the same Shape, and Hue; and the Points of all turn upwards. They are thick and fleshy; their Colour a very lively green, and they are covered in a various and irregular Manner with Spots, and rising Tubercles: these are of a firm Substance, and in Colour of a pearly white, and they are most conspicuous on the younger Leaves.

The Shape of the Leaf in this Plant is not

less remarkable than the Ornament: it is of an oval Form in the whole, but that the Point is immoderately long and slender; toward this Point the Leaf grows triangular, and the Extremity is tip'd with crimson. This, with the fine green of the Body of the Leaf, and its pearly Protuberances, give a delicate Variety: but the Points are most red on the old Leaves; and these have the Tubercles least distinguishable.

The Stalk is two Foot high, and towards the Top usually divides into three or four Branches. It is round, green, smooth; purplish at the Bottom, and without Leaves.

The Flowers want Colour to make them beautiful, but they are numerous and singular enough in Form. They cover the Tops of all the Branches in a kind of Spikes. Each has its very short and slender Footstalk, and is tubular in the Body, and expanded in six Segments at the Rim. There is some Tinge of red often at the Base of the Flower; and the rest is of a whitish green. The Division at the Rim is so far singular, that it forms two rude Lips, of which the upper turns a little back.

There is no Cup to this Flower, but in its hollow Part rise six Filaments and a single Style. These refer it to the *Hexandria Monogynia* of LINNÆUS, the sixth Class, and its first Section.

It is a Native of *Africa*, and is to be propagated as the other *African Aloes* from Suckers.

The Method we have given at large in a preceding Number, treating of another of these Species.

6. THORNY SENSITIVE PLANT.

Plate
XXV.
Fig. 6.

We give the Gardener here the general Name Sensitive, suited to many Species of the *Mimosa*, with various Additions used to express them all; and with the Epithet, thorny, usually apply'd to this; which possesses the Quality that Term describes of shrinking from the Touch more delicately than many others.

BREYNIIUS calls it, *Mimosa spinosa tertia siliquis parvis echinatis*; and by the same Name it is described in several of the succeeding Authors.

LINNÆUS, much more correct and distinctive, calls it, *Mimosa foliis subdigitatis pinnatis caule aculeato hispido*, prickly rough stalked Mimosa, with the Leaves pinnated, and disposed in a finger'd Manner.

The *English Name Sensitive Plant*, tho' appropriated to this Genus in common Acceptation, has been given to many others. The Quality of receding from the Touch being not peculiar to the *Mimosa*, but inherent also in one of the Wood Sorrels very strongly, which thence obtain'd early the Name of the *live Plant*, *Herba*

viva; and in a less Degree in many others.

The Root is divided into many Parts, and hung with Fibres.

The Stem is round, as thick as a Goose-quill, of a brownish Colour toward the Base; and greener near the Extremities; and is beset at Distances with small brown, hooked, and sharp Prickles.

The Height is about two Foot, and it divides into innumerable Branches. The Bark on the lower Part usually cracks and grows rough, but on the younger Shoots it remains always smooth.

The Leaves are very singular and beautiful. Each is supported on a long tender Footstalk, which often droops with it; and is composed of five, six, or eight Parts, placed in the fingered Manner, and each of these is regularly pinnated; the Pinnæ oblong, small, and extremely numerous.

The Colour is a fresh, but not very dark green; and the Pinnæ, and their supporting Ribs naturally stand all wide expanded, but on a Touch

Feb. Touch with the Hand, or only on the Motion of the Air in an Approach toward touching it, they collapse and as it were fade.

After a little Time of Rest the Ribs rise to their proper Places again; and the Leaves expand with their first Vigour.

The Flowers are numerous, and they are collected into a kind of round Heads, placed on slender Footstalks at the Extremities of the Branches. They are of a greenish white at first, but afterwards they acquire a Tinge of purple.

Each has its small Cup, form'd of a single Piece, and divided by three irregular Indentings at the Rim: this forms the Body of the Flower, for there is no Petal.

The Filaments are only four, very long, and very slender; and they are terminated by incumbent Buttons. In the Midst of these rises a single Style.

The Number of Filaments in other of the *Mimosæ* is much greater; and refers the Student, thus far instructed in the Science, to their Origin, for the finding its Class. They rise from the Receptacle, and he is therefore to refer the Plant to the *Polyandria*; the single Style shews it one of the first Section of that Class, the *Monogynia*.

This, if the strict Rule of Science be observ'd, does not belong to the same Class with them: LINNÆUS has, however, placed it among the others, considering the general Agreement of Parts, as a Mark of its being a *Mimosa*, altho' it differs from them in a Point so essential. It agrees indeed neither with the establish'd Character of the Class or Genus in which this Author has placed it.

Culture of this SENSITIVE PLANT.

It is a Native of the *Brazils*; and with us requires a Stove: but with due Care it will rise to full Perfection.

In favourable Summers it will indeed live many Months in the open Air; but there are two very substantial Reasons why the Gardener should not suffer it: there will be great Diffi-

Feb. culty in keeping it alive through the Winter after this Exposure to the Air; and it will lose in a great Measure the wonderful Quality for which it is rais'd, that of drawing in its Leaves on the Touch.

This in a great Measure depends upon its Tenderness, and when harden'd by the cool Air, and accusom'd to its Motion by the Winds, these Things will have less Effect upon it.

For this Reason let not the Gardener try how much Cold the Plant will bear; but keep it in a State of delicate Sensibility.

It must be rais'd from Seeds; and the best are those brought from *South America*; but when such cannot be had, it will grow freely enough from such as are ripen'd in our own Stoves.

Early in Spring let some of these be sown upon a common Hot-bed, cover'd four Inches with rich Garden Mould.

When the Plants appear, let them be thin'd where they grow too close; and only as many left as are intended to be rais'd; beside a few for Casualties.

When they are three Inches high, they must be transplanted each into a small Pot, filled with the richest Garden Mould; and when these have had a gentle Watering, they must be set up to the Rim in a Bark-bed of moderate Heat. Let the Glasses be cover'd with Mats, to shade the Plants till they are perfectly rooted; and after this let them by Degrees be harden'd a little by admitting a small Quantity of Air in the Middle of a mild Day.

When the Plants are grown to some farther Bigness, they must be shifted out of these Pots into larger.

The Way is to shake them out with the entire Lump of Mould; and trimming the straggling Fibres, to set this upon a little of the fresh Mould in the new Pot; and fill up with more.

In these Pots they must be again set up to the Rim in the Bark-bed; and shaded till they have recover'd the little Check of this Removal. They must then be water'd at Times; and have some Air admitted in good Days; and when they have acquir'd a handsome Size, they are to be removed into the Stove.



C H A P. II.

The Management of the Flower-Garden.

THIS Week let a warm and well shelter'd Border be dug up, and broke very fine; and upon this sow some Seeds of Annuals. There is not a Certainty of their Success, but if the Weather prove favourable, it is not improbable they may rise; and they will flower strong; and ripen their Seeds in Time, because they

will have no Check of Removal.

Transplant into the Borders, where there is any Deficiency, some Roots of *Fraxinella*, and some of the handsome *Hieraciums*; they will succeed perfectly well at this Season.

But in all Spring Plantings of fibrous rooted perennial Plants, let the Gardener observe to manage

Feb. nage every thing for forwarding their immediate Growth, otherwise they will be very much behind those planted in Autumn. To this Purpose let a large Hole be open'd for each, and the Mould be very well broke.

Let the Roots be taken up with Care, keeping a large Lump of their own Earth about them. Let them be set into the Hole lightly and carefully; the Ends of the Fibres all trim'd off; and the Mould immediately thrown in upon them, and settled well to them; closing it carefully about the Head of the Root, and finishing all by a slight Watering.

Next let the Gardener examine the Condition of those hardy Spring Flowers which are planted in the Ground among Flowering-shrubs. Let him break the Surface of the Earth between them and all about them, and clear away the Weeds.

This will answer a double Purpose: it will not only give the Roots fresh Strength to flower, but by clearing the Spot will shew those Flowers to the best Advantage: and it will strengthen the

Shrubs, and prepare them for their Spring Shoot with Vigour. Feb.

This done, let the Grass-Walks be examined and clean'd up. Let them be mow'd and laid even, and the Sides cut perfectly strait: and let all the Gravel be well roll'd.

Last of all this Week let the Pots of choice perennial Plants be clean; and the Roots refresh'd in the Manner we directed for the Auriculas in a preceding Number.

Let all dead Leaves be pick'd away; and let the Earth be broken at the Surface, and taken out an Inch or more in Depth, with Care not to wound the principal Roots: then let the Ends of those Fibres that appear be snip'd away with Scissars; and immediately pour in some fresh Mould from one of the Heaps of Compost suited to the Nature of the Plant; and when it is fill'd up let there be a gentle Watering. This will greatly encourage the Shoot for a Stalk, and the Effect will be seen all Summer.



S E C T. II.

The Business of the SEMINARY, for this Week.

LET the Gardener dig up the Ground about such Trees as have stood some Time in their Place: they will shoot the more freely for this, and they will be the fitter for removing.

Wherever the intended Trees, for this Season's transplanting, are not in the Ground, let the Places be prepar'd to receive them, and the Opportunity of a mild Day after Frost be taken for the Business. The best Weather is such as inclines to Rain, for the very Dampness of the Air will assist.

In such a Day let them be carefully planted, well secur'd, by fixing the Mould about the Roots; and, if needful, by Stakes. They will gradually shoot out Fibres; and, in dry Soils, will succeed thus better than at any other Season.

We directed in a former Week planting Cuttings of Gooseberry, Currant, and some other small Shrubs: but without Care, this early Season, so advantageous with good Management, will be destructive.

Let the Season be regarded, and these Cuttings manag'd accordingly. If it be now severe Frost, let the Ground all about them be cover'd with some Pease-straw, and Bricks or Pebbles laid upon it to keep it down firm. This will mellow the Soil, keep out the Frosts, and encourage the Cuttings to root.

On the contrary, if the Season be mild, only let the Surface, once a Fortnight after their Planting, be broken with a Hoe between them. Watering it is not likely they should want; for mild Weather at this Season is usually attended with Rain.



S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

THE Gardener is employ'd, according to our Directions in this Part, in planting Fruit-Trees where they are wanting; and we shall here add, to the Directions given on that Head, some useful Cautions.

In the first Place, if the Care we have directed to be taken of these Trees, while in the Nursery have been observed, they will be ready to come up freely, and in proper Condition.

The great Article in that Part of the Ground, is that digging between them which we have mentioned; for if they be left in an undug Soil, their Roots will spread every way to a Distance, and few Fibres will be produc'd near the Stem.

In this Case, when they come to be taken up, the Roots are cut off at a small Distance; and all that comes with the Tree is their thick naked Part. This will hold no Earth about it, nor will any Part of it readily draw Nourishment. Yet this is the Method too commonly us'd; whence the Trees, if planted in Autumn, rot; and, if in Spring, wither. This is one great Source of the ill Success of Plantations. But they find no Fault who sell the Trees: the Purchaser is told these Things will happen; and the Nursery-Man has a new Demand.

On the other Hand, when the Ground is frequently dug between and round about these Trees while in the Nursery, the Shoots of every Root being frequently shorten'd, Fibres are struck out in Abundance near the main Stem; and these will hold together a good Ball of Earth, for the taking them up at a Time for Transplanting, and will furnish Nourishment till the new Roots are struck.

For this Reason let the Owner, if they be rais'd in his Seminary at Home, see the Earth be dug at Times about them; and if purchas'd in a distant Nursery, let him take Care they are found in a Piece of Ground that has been dug.

Next to this Article of their being in a proper Condition for taking up, comes the Manner of doing it. The Success of the Plantation in a great Measure depends upon this; and nothing is in general done so carelessly.

A Spade is struck down in four or five Places round about them, and then they are pull'd or twisted up. Thus, many of the Roots not cut by the Spade, are crack'd and torn, and the rest parted but roughly. Beside, this Method cuts off all the Roots too short. 'Tis expeditious; but in a Garden there is no Need for this Hurry; and it always hurts the future Growth.

The longer the Roots are left the better the Tree will grow; and the less they are injured the quicker it will receive Nourishment.

Let the Gardener pare away the Surface about the Tree he is to take up, till he discovers the principal spreading Roots: then dig a Trench round the Roots, at such Distance from the Stem as is proportioned to the Bigness of the Tree: the larger it is, the longer the Roots will be requir'd to nourish it.

Let him take away the Mould from under the Tree, and observe to leave as much as will hang about the Roots; which, according to our Management, will be a very considerable Quantity. Then let him cut off the Roots at this Distance with a sharp Knife; and by this Time let the Hole be open'd to receive the Tree; making it at least half a Foot wider than the full Extent of the Roots when cut.

Instead of pulling up the Tree, let a Hand-Barrow be carefully drawn under it; and upon this let it be carry'd to the Place: then let it be again examined in every Part of the Root; and if any of the Ends be ragged, bruis'd, or broken, let them be cut off with a sharp Knife, sloping downwards.

After this, the Consideration comes of fixing them in the Earth, and this is to be done in a different Manner from the common.

When they have been taken up with this Care, they bring, in a great Measure, their own Earth with them: and shaking them and violent treading down, would only force it off, and render the former Care fruitless.

Let the Hole be about fifteen Inches deep, and the Surface at the Bottom of it well broken. Let the Tree, with its Ball of Earth, be set carefully upright in it; and as there will be a Space every way about it, let this be fill'd with the Mould first thrown out of the Hole, observing to get it into every Crevice. This is easily done, when Time is taken for the Planting; and but little is put in at once.

Then let the Mould be brought up to some small Thickness over the Surface of the Lump or Ball brought with the Root, and give a gentle Watering.

This is the Method of planting with Security, when the Trees are brought only out of one Part of the Ground to another, or from a very near adjoining Nursery; but as it frequently happens that they must be purchas'd at a Distance, we shall

Feb. shall add some Rules for the bringing them to the Ground in the best Condition.

The usual Method of Packing is with Straw about the Roots, and a Mat over it: but if this be not done with very great Care, it often fails; and many Accidents will happen in Spite of the best Caution.

Moss is vastly preferable to Straw upon this Occasion; and as it is every where plentiful enough, it should always be us'd.

The Loss of these Trees generally happens from the drying and withering of their Roots: this is but ill prevented by Straw; but Moss will very securely defend them.

It is the Quality of Moss to receive and retain Water like a Sponge; and being put about them when moist, it will continue so to the End of any moderate Journey. It has also the farther Advantage of clinging much closer to the Roots.

Any Moss will answer the Purpose, by being gather'd when full of Dew; but there is one Kind preferable to all others. This we have nam'd, on a preceding Occasion, for its Use in detaining of Moisture.

It is a white Moss, very large, and growing in thick Tufts upon Bogs. If this be too moist, let a little of the Wet be squeez'd out; and in the same Manner in the other Kinds: let them be wound about the Roots, and plac'd between them; and when the Whole are well cover'd, let there be Straw and Mats put about them as usual.

This will answer in the common Way of Carriage for Trees of any Size; but there is a yet better and more secure Method for those which are taken up small, and train'd for Walls.

As these lie flat, a Hamper will hold a large Parcel of them; and the best Method will be to have one made for the Size and Quantity of the Trees.

Let the Bottom of this be well cover'd with Moss, and the Trees then laid in, with good Quantity of Moss between and among their Roots: this will secure them against every kind of Danger; and they may be carry'd the longest Stages in the Kingdom, and receiv'd in as good Condition as if first taken up.

The Methods of taking up and carrying these Trees to their Places, with the Rules of planting them being thus laid down, the sole remaining Consideration is the pruning of the Heads or Branches. This is a peculiar Thing in regard to Fruit-Trees; and we shall therefore speak of it particularly.

We have observ'd, in general, on a preceding Occasion, that the Top of a Tree should always be reduc'd at the Time of Planting, because less

Nourishment than usual will for some Time be drawn by the Root.

But in Proportion, as by this careful Method we have directed, more Roots are preserv'd in a growing Condition, and more Earth is detain'd about them, a better Head may be left than ought to be when they are remov'd more rudely.

With Regard to Fruit-Trees, the common Practice errs in leaving too many Branches upon them, and in cutting those too short. The Consequence of thus leaving a greater Number of Stumps than can be needed, is, that Nature throws out too many Branches, and those irregularly.

Experience is too powerful for all the Authority in the World; and this shews that for whatever Service the Trees are design'd, whether for Walls, for Dwarfs, or Espaliers, or for common Standards, the Branches will be too many; they will spoil one another; and the cutting them out the next Year is but an imaginary Cure: for those which are left, will, from this, become too luxuriant in useless Growth, and will blossom late and poorly.

Six Inches is the common Length allow'd; and they who leave them eight think they exceed Discretion; but the Consequence is, that if the Branches thus shortned be of more than one Year's Growth, they commonly perish: for their Buds are flat from much shading, and often will not open. At the best they expand but slowly and imperfectly, and the Branch sickens and decays. There must be some Part left for Vegetation, to draw up the Sap receiv'd by the Root, or all will come to nothing.

The strongest Buds are fittest for this Purpose, and these are such as grow nearest the Ends of the Branches, not those toward their Insertion at the Stem: therefore it is these Buds which should be retain'd upon the Tree; and the Method is plain, there must be fewer left, and those few must be longer.

Standard Trees are all prun'd at Planting in this wrong Manner, and all hurt by it, tho' in various Degrees, according to their Condition.

If the Head of the Tree be but one Year old, this short Cutting brings out the new Branches too near; the Head will be too full, and the Boughs will gall one another; nor can Air get in to ripen the Fruit and give it a good Taste.

In those which have Heads of two or three Years old, the Damage is much greater: the blossoming Buds and Rudiments of Spurs in many Kinds are cut off by this Method. Therefore let the Quantity of Head reduced, be proportioned to the Roots lost; and let the Branches be fewer and longer.

S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

THIS Week let the Gardener dig up three Pieces of his Kitchen Ground, and raking them well, and laying them perfectly level, let him on one sow some Radish Seed, on the other some Spinach, and on the third Lettuce.

These will come into Service at a very agreeable Time; and to keep up a Supply, there should once in a Fortnight, for some Time, be a Repetition.

Let a Piece of very rich Ground be dug up under a warm Wall, and sown with young Sal-letting. This soon grows too large for Use, and must therefore be frequently renew'd by fresh Sowings.

This is a fit Season for sowing a Crop of Sorrel; and Beets should be also sown now for a large Crop.

The Excellence of this Root depends upon its Size, therefore let the Ground for it be very deep dug, and very well broken.

This Week is proper for the planting Rocambole, and all the Onion Kinds.

In all these Sowings and Plantations, the same Cautions are to be observed.

If the Frost set in very severe just after the Seeds are in the Ground, the Surface must be lightly cover'd with Pea-straw, or some such

Matter; if when they come up there should be mild Weather without Rain, though this is not common at the present Season, they must be carefully and gently water'd.

This should be done with a Pot that has a fine Nose; and the Water must be taken from a shallow Pond, or it must be such as has stood out all Day.

The Time of watering must now be Morning; and the best of all is an Hour and half after Sun-rise, for then the Frost is over naturally for that Night, and the Sun will warm the Water in the Ground: whereas if it had been given at Night in the Summer Way, a Frost coming on might have taken the more hold, and destroy'd the whole Crop.

After the Plants are up, they require to be kept clear from Weeds, and to have the Surface of the Earth frequently stir'd about them, but not too deep.

The Weeds must be pulled up by Hand from among those which are tender, and grow close; but for the larger Kinds the Hoe very well answers the Purpose.

With good Care there is no Season from which Things grow so freely; but without this Care none is so dangerous.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XXVI.

For the Latter End of *February* and Beginning of *March*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and curious Plants now in their Perfection.

I. DOUBLE VIOLET:

Feb.
Plate
XXVI.
Fig. 1.

WE enter now upon the Flowers of Spring. The Violet is one of the first, and tho' a very humble Plant, one of the most considerable in the Fields: sometime in *March* it usually flowers in shelter'd Places; and has thence the Name *March Violet*; in Gardens; with good Management, we bring it somewhat earlier; and there are Seasons so favourable, that it blows the first Days of that Month.

We treat of it here under that elegant Appearance it makes in the double Form: but this the Botanist knows makes no Distinction in the Species: the Seeds of the single Violet will, by good Management, raise this double Flower; and it is therefore the same original Plant.

In the single State the common Authors call it, *Viola martia*, *viola purpurea*, and *viola adorata*.

In this elegant Condition, when the Flower is enlarg'd, and cluster'd with numerous Petals, they call it, *Viola duplex*, and *Viola martia multiplici flore*.

LINNÆUS considers this only as a Variation from Culture, and calls the Plant; *Viola araulis foliis cordatis, stolonibus reptantibus*, Creeping Vio-

Numb. XXVI.

let, with heart-shap'd Leaves, and no rising Stalks.

The Plant is in its common State too well known for Description; nor does it receive much Alteration, except in the Flower, from Culture.

The Root is fibrous, broke into many Heads, and brown.

From this rise at the same Time Leaves, Flowers, and a kind of Stalks which lie upon the Ground, and take Root at their Joints; these are the Stolones of LINNÆUS: they are green, thick, and round; and wherever they root, there rise also Leaves, and a new Plant is formed.

The Leaves stand in Clusters, and they are placed singly on long, slender, and green Footstalks. They are roundish, but somewhat Heart-shap'd for the Stalk; and they are bluntly nick'd along the Edges. Their Colour is a fine strong green.

Among these rise the Flowers, each supported on its single Footstalk. These are shorter, and more slender than the Stalks of the Leaves, and their Colour is a paler green; they are frequently also ting'd at the Base with purple.

4 H

On

Feb.

Feb.

On the Summit of each is placed one Flower, too large and heavy for that tender Support, so that it always hangs drooping: in the double Condition of which we here speak, it is composed of a Multitude of oblong, broad, and obtuse Petals, of a very deep velvety blue, with some Tinge of purple; and it has a light, but very delicate Fragrance.

This is its Condition under the present State in Gardens; but 'tis to the Hedges he must go who would refresh the Sense with its full Perfume, or trace its Characters.

There gathering a single Flower, he will find in it a great deal over-look'd by common Eyes, and worthy of his most strict Observation.

The Cup is short, and form'd of five Leaves, pointed at the Tops, equal in Bigness, but irregularly placed: two support only the upper Petal of the Flower; of the others, one is placed near each of the Side Petals, and on the remaining one rest the two lower.

The Flower we have already said is form'd of five Petals: these are unequal in Size, and irregular in Disposition; and they make in the whole a gaping Figure.

The upper Petal which stands single is broader than the others, divided at the End, and runs out behind into a small close Tube, which makes its Way beyond the Leaves of the Cup: the common Name of this Part is the Spur of the Flower, but Science calls it the *Nectarium*, Seat of the Honey Juice.

The two Side Petals are smaller and obtuse, and they stand strait and even: the under Pair are larger, and turn upwards.

The Filaments are five, and they are very small. Two of them are placed at the upper Petal, and run into the *Nectarium* by their united Bottoms: all have broad obtuse Buttons, which are edged with Membranes, and naturally coalesce together.

The Style is single: it shews itself beyond the Buttons, and is terminated by a hooked Stigma.

The Seed Vessel which follows is of an oval Form, composed of three Pieces, and contains numerous Seeds.

The Student will perceive that the Coalescence of the Buttons upon the five Filaments in this Flower, declare the Plant one of the *Syngenesia*.

He will remember that those Plants we have hitherto taught him to refer to this Class, were of the composite flower'd Kind; in which the various Impregnation from *Hermaphrodite* to *Female Floscules*, added the Title *Polygamia*.

This Plant having nothing of that Singularity, stands in another Series, whose Title of Distinction is *Monogamia*.

Culture of the DOUBLE VIOLET.

The Plant being in its wild State, native of

our own Country, cannot demand great Care from the Gardener in its Preservation: but as its Situation wild is in shadowy Places, and under cover, this he must regard. Let him give a better Soil in the same Kind of Shelter, and he does all his Art can to assist and improve it.

It is a general and unlucky Truth, that in Gardening where little is needed, nothing is done. The very Books written with purposed Intention to instruct the Gardener, say nothing of the Culture of this elegant Flower. We shall therefore lay it before the Reader entire, as Practice, founded upon Reason, has shewn it most successful.

If any have a Mind for a quick Supply, the *Double Violet* is common enough, and the parted Roots are free in growing. These planted in the Shade fill our Borders: and this fills up the Measure of the Gardeners Knowledge. Let him who would raise them more successfully, proceed thus.

In the Beginning of *October* let him dig up a Load of Earth from under the Turf, in a rich upland Pasture. Let him mix with this a third Part of a Load of rotten Earth from under an old Wood-pile; and blending these well, lay them up in a Heap for Winter.

In Spring let him mark where the best Violets flower wild under Hedges. Let him fix upon a Dozen strong, and flourishing Plants, and take off all the Flowers but one from each. Let him leave these for Seed, and when it is ripe gather it with Care.

Let the ripe Seed Vessels be laid to dry, and burst upon a paper'd Shelf; and let the Piece of Ground be now chosen for them. Dig out the Earth, and fill up with the Compost; it must be in a Part of the Garden shaded, but open to the South East.

Lay the Surface level, and scatter on the Seeds after they have lain a Week in the Seed Vessels, and a Week to harden out of them. Sift over them a Straws-breadth of the same Compost; and then lay upon the Bed a light Covering of Hawthorn Boughs.

Thus let the Seeds remain to take their Growth, only observing to keep the Ground clear of Weeds, and in very dry Seasons to give it sometimes a little Water.

The second Year the Plants in general will flower, and there will be found among them single Flowers, blue, white, and redish, all of the most perfect Fragrance; and many double, blue, and also white ones.

Let these be mark'd as they are in flower: the double blue with one Mark, the double white with another, and the single ones with a third.

In the Middle of *October* following, let all the single ones be taken up, and planted among Shrubs, and in Wilderness Quarters. Let the double white be next taken away, and planted

Feb. out in shady Borders : and when only the perfect Kind, or double blue are left, it will be easy to dispose them.

They must stand at a Foot Distance in the Bed ; and as many of them as can must be left unremov'd, those which grow near being taken

up and planted at the due Distance. Thus will the Bed be fill'd ; and the next Year the Flowers will glow with all their Lustre. They will vastly exceed the common double Kind in Bigness and in Colour.

Feb.

2. GREAT PURPLE ANEMONE.

Plate XXVI. Fig. 2. We shall, in some succeeding Numbers, treat largely of the Double, the Variegated, and the Proliferous Anemonies : but we mention first a specious Kind tho' single ; not only as it rises earliest in Season, but as it is the Parent of the rest. Most of the finer Kinds are rais'd from Seeds of this.

All the Botanic Writers name it. CAMERARIUS and his Followers with the single Name *Anemone*. Others add *tenuifolia*, as the Distinction from another Kind, in which the first Leaves are broader. To this others add *simplici flore*. Fine-leav'd *Anemone* with single Flowers ; and justly give that Name with various Epithets of Distinction to all the *Anemonies* rais'd from this Stock.

LINNÆUS founds his Distinction of this Species also on the Leaves ; but he expresses it in Terms more scientific : he calls the Plant *Anemone foliis decompositis ternatis* : *Anemone*, with the Leaves subdivided in the ternate Manner.

The Root is tuberous and irregular, brown on the Outside, whitish within, and hung with many thick Fibres ; dividing itself in Time into numerous Heads.

The Leaves are large and beautiful. They have long hollow'd Footstalks, reddish at the Base, and in the upper Part green.

The Body of the Leaf is of considerable Extent, but it is divided into very numerous Segments, and these are again subdivided into others ; the Partition being all the Way in Three's, more or less regularly.

The Stalk is round, tolerably upright, not very thick : purplish at the Base, and upwards green. It is not divided or branched ; nor, except at one Place, has any Leaf.

At some Distance from the Top stands this single leafy Addition, which is to be consider'd rather as a foliaceous Involucrum for the Flower,

tho' at a Distance from it, than as a common Leaf : but it is like the other, naturally divided into three Parts.

On the Summit of the Stalk is plac'd a single Flower ; this is of a very considerable Size and a conspicuous Colour, a deep Violet Purple. We are accusom'd to the Double Anemonies, and neglect this ; but it is naturally a very handsome Flower.

It rises naked from the Summit of the Stalk, and consists of an uncertain Number of Petals : when poorly nourish'd these will be only six, more usually they are nine ; and in the Luxuriance of Culture they become innumerable.

They are rang'd naturally in distinct Series, three in each ; and in the Centre are plac'd numerous Filaments, crown'd with a kind of double Buttons. There rise in the Midst of these a Number of Styles, from the Rudiments of so many Seeds, which afterwards stand in a naked Head.

Our Student knows that numerous Filaments belong equally to the *icosandrous* and *polyandrous* Classes ; the Distinction being in their Insertion.

They establish this *icosandrous* Class when they rise from the Cup ; but this Flower having no Cup they shew the Plant belongs to the *polyandrous* Tribe. The numerous Styles declare it also to be one of the *Polygynia*.

Culture of this ANEMONE.

This is not an *Anemone* to be rais'd for its own Sake, but as the Parent of the Double Kinds : 'tis under the succeeding Heads we shall describe the Methods of raising them from its Seeds. This thrives freely in a common Border. It is a Native of the *East*, and there flourishes by the Sides of Woods.

3. GOLDEN

Feb.

Feb.

3. GOLDEN NARCISUS.

Plate XXVI. *East*, and deservedly esteem'd throughout *Europe*.
Fig. 3. Several of less Beauty, which yet require as much Care, have taken its Place in Gardens, but it deserves to be introduced in all.

Many of the Writers on Flowers have nam'd it but under various indeterminate Denominations.

BESLER entitled it *Narcissus orientalis mediocroceus major*: Great Oriental *Narcissus*, deep yellow in the Middle.

LINNÆUS calls it *Narcissus foliis ensiformibus florum nectario campanulato erecto petalis longe brevioribus*: Sword-leav'd *Narcissus*, with a campanulated Nectarium much shorter than the Petals.

The Root is large, roundish, and furnish'd from the Base with many thick coarse Fibres.

The Leaves are usually four; they are long, of a moderate Breadth, and have some Resemblance of the Blade of a broad Sword.

Their Colour is a blueish green, and they have some Substance.

The Stalk is robust; round, naked, and a Foot and half high, purplish at the Bottom, and green toward the Top.

It has no Leaves; but at the Summit is plac'd a Scabbard, serving as a general Cup or Defence for many Flowers.

This bursts when they are ready to appear, and becomes yellowish.

The Flowers rise together from the Head of the Stalk in the Bottom of this Scabbard, ten, twelve, or more in Number.

Together they make a large Tuft, like a Nosegay; and they are separately of considerable Size.

Each rises naked from the Stalk, and is compos'd of a Nectarium and six Petals.

The Colour is, in the whole yellow, but with a great Variation. The Petals are of a delicate pale yellow, yet with the true golden Tinge; and the Nectarium is of the deepest yellow that can be conceiv'd with Brightness.

The Nectarium, or, as the Gardeners commonly call it, the Cup, is very conspicuous, tho' much shorter than the Flower. It is form'd in the Manner of a Bell, with an even Rim; and stands out a little from the Insertion of the Petals. These are six in Number, and they are insert'd at some Distance below the Edge of the Nectarium, in a regular expanded Manner.

From the lower Part rise six Filaments; they are terminated by oblong Buttons; but those are hid within the Tube of the Nectarium, unless sought with Care.

The Style is single, longer than these, and crown'd with a three-parted Stigma.

The Fruit is a roundish Seed-vessel, form'd of three Parts, and lightly mark'd with three Ridges; and it contains many Seeds, in three Cells, with a Columnar Receptacle.

The six Filaments shew the Plant one of the *Hexandria*, LINNÆUS's Sixth Class; and its single Style places it among the *Monogynia*, the first Sub-distinction under that general Head.

Culture of this NARCISUS.

It is a Native of the *East*, but it is not confin'd to that Quarter of the World; some of the warmer Parts of *Europe* have it, tho' in less Perfection.

In *Turkey* it exceeds wild the best Appearance we can bring it to make in our Gardens: 'tis from thence we should import Roots for a quick Stock; and Seeds for raising it to Perfection, and with Variety.

The Reason that we see the Plant so much below its proper Standard here, is, that those who sell the Roots, instead of obtaining them from Countries where they are native, import them from *Holland*; where, tho' many very fine ones are rais'd, the best are kept, and our People are supply'd only with an inferior Kind.

Those who chuse to raise them from Off-sets, should take such as have been with the Parent Root three Years in the Ground. These should be taken off in *August*, and planted at ten Inches Distance. They will thus rise to a very good Condition.

The Method by Seeds is in all Respects preferable: it is, in general, the same that must be us'd for all the *Narcissus* Kinds: but as there are some Particularities in the raising this Species, we shall enumerate them.

Seeds should by all Means be obtain'd from the warmer Countries; and carefully collected from a good Flower. They must be sown the first Week in *September*, in Boxes of some one of the light rich Composts, and set where they can have free Air, and the Morning Sun.

In Winter the Boxes must be remov'd into a southern Aspect; and toward *April* be taken back into their first Place again.

In Spring the Leaves will appear; and they must be kept clear of Weeds, and sometimes gently water'd.

Early toward Autumn they will fade; and a Quarter of an Inch of the same Compost must be then sifted over them.

They must throughout the Year be kept with the Mould neither wet, nor crumbly thro' over Dryness; and the third Year they should be separated from the Earth, by sifting; and planted out in a Place shelter'd from Winds, and not open to the full Sun.

The first Week in *August* is the best Time for planting them. The Bed must after this be kept clear from Weeds; and five Weeks after they must have a fresh Covering of an Inch of the same Compost.

In



Double Violet

Great Purple Anemone



Golden Narcissus



Lady's Slipper

Purple Edg'd Tulip



Pridium

J. Still delin et sculp.

Feb. In this Bed they will flower; and there will be a Mixture of better and more common, but very few bad ones.

They should be mark'd when in Bloom; and the succeeding *August* the Roots of an inferior Kind should be taken up, and planted in other Parts of the Garden: only the fine ones left.

Feb. These shou'd stand at a Foot Distance; and not be taken up till the fourth Year.

They will thus blow fairer every Season than the last; and once in three Years afterwards will yield many Off-sets. These must be taken off with Care, and we have said how they are to be manag'd.

4. L A D I E S S L I P P E R.

Plate
XXVI.
Fig. 4.

The whole Earth does not afford a Plant exceeding this in Singularity; and 'tis strange we do not see it oftener in Gardens. The Trouble of raising it is little, and the Difficulty less; for it is a Native of our own Country.

It surprizes the Peasant in the *Yorkshire* Woods; and is not uncommon in *Lancashire*, *Cheshire*, and the adjacent Counties; but of those who have been taught to admire it there, few have thought of enriching their Gardens with its Roots.

Most of the old Writers have mention'd the Plant; and almost universally under the Name *Helleborine*; the Leaves resembling the Bastard *White Hellebores*, commonly call'd by that Name.

C. BAUHINE adds to that Title the peculiar Character of the Flower, and the Name thence derived: he calls it *Helleborine flore rotundo sive calceolus*. Others, *Calceolus Mariæ*.

LINNÆUS agrees with those who separate it by a peculiar Name from the other Genera, and calls it *Cypripedium*; adding, as the Distinction of the Species, *radicibus fibrosis foliis ovato lanceolatis caulinis*: Fibrous-rooted *Cypripedium*, with oval and spear-pointed Leaves growing on the Stalk.

This serves very happily to distinguish it from the bulbous *Cypripedium*, by some suppos'd an *Orchis*, which has no Leaf on the Stalk, and differs greatly in Aspect.

There needs no Character of Distinction between this and the *Siberian* or *North American* Kind; for these tho' describ'd by too many as distinct Species, are, in Reality, no more than Varieties from Accident of Growth.

In the Woods of *Yorkshire* the Flower is smaller than in *Lancashire*: in Gardens it exceeds in Bigness and Lustre that of *Lancashire*. We have represented in this favour'd and most perfect State in our Twenty-sixth Plate.

The Root is irregular, oblong, and creeps beneath the Surface: it is of a blackish Colour, and hung with innumerable Fibres; mark'd on the Surface with the Impressions of decay'd Stalks, and swoln at the Extremities with Buds of new ones. The Taste is austere, acrid, and bitter.

The Leaves are oblong, broad, and firm.
Nº 26.

Their Colour is an elegant green, and they have high Ribs running lengthway.

The Stalk is ten Inches high, round, upright, and of a pale green, often stain'd with red at the Base. The Leaves on this are like those from the Root, nervous, and a little hairy, as is also the Stalk.

In the wild State the Plant usually produces only a single Flower, which terminates the Stalk: but in Gardens, and where Nature greatly favours it elsewhere, there will be two. One always terminating the Stalk; the other rising from the Bosom of the Leaf next under it, on a long tender Footstalk.

These are large, and in Colour partly yellow and partly purplish: the Slipper, as it is call'd, being yellow, the rest ting'd with Crimson: but these Colours are not certain, white often getting in among them, and sometimes the Purple or Crimson becoming universal. What we have first describ'd, as it is the most natural, is also the most elegant State of the Plant.

The Situation and Colouring of the Flower being known, the Student will be earnest to understand so singular a Form. This would be altogether inexplicable, according to the earlier Systems of Botany; but what we know of the Course of Nature now renders it sufficiently familiar.

In the Place of a Cup, it has that kind of Defence call'd the Spatha, or Scabbard; form'd of some light scatter'd Pieces of a membranous Substance, defending a single Receptacle for the succeeding Parts of Fructification.

There is, beside this, no other Cup: the Flower stands naked upon the Rudiment of the succeeding Fruit; and it consists of four Petals and its singular Nectarium: this is the Piece call'd the Slipper; and as it is the most peculiar, is also the largest Part of the Flower.

The Petals are long, narrow, and plac'd in Form of a Cross: the upper and under ones are longer than those plac'd sideways: they are all of a deep but elegant purple, and the two Side Petals are hairy on the Inside. This gives it a velvety Hue, and adds greatly to the Beauty of the Flower.

From the Base of the lowest Petal rises the
4 I Necta-

Feb. Nectarium, or Slipper; this is of the Shape and Bigness of a Pigeon's Egg; tender, membranaceous, and hollow.

The Colour is naturally a pale yellow: with good Culture it will glow perfect gold; and on the under Side it is mark'd with a few long Veins of a purple, like that of the Petals, but tinctur'd a little with Crimson.

This is all the Red natural to the Slipper Part; but sometimes from the Luxuriance of Nature, or of ill directed Culture, it spreads over the Whole.

The Slipper is rounded and obtuse at the End; and toward the Base it has an Opening, which shews it somewhat hairy within. This gives it the Air of a coarse Slipper, or rather of a Wooden Shoe a Part of Dress with which we hope the *English* Reader will be long unacquainted.

The Opening is defended by a kind of Lip, doubled, and very singular. The upper Part is white, sprinkled with purple Spots: the under thicker, greenish, and spotted at the Sides with black.

The Eye, satisfy'd with tracing the Wonders in the Body of this Flower, must examine its Fructification, to know to which of the LINNÆAN Classes it belongs.

The Filaments are only two, and they are very minute; but they are sufficiently conspicuous from their upright Buttons. These are defended by the upper Lip of the Nectarium or Slipper; but, that rais'd a little, they become very obvious.

The young Botanist must not be rash in adjudging this Plant, from its two Filaments, to the *Diandria*: let him trace their short Course to the Origin, and he will find them fix'd upon the Pistil. This shews the Class; the Twentieth in the LINNÆAN System, the *Gynandria*.

LINNÆUS, under this Term, comprehends those Plants, whose male Parts for Fructification grow up on the female.

The two Filaments serve as the Mark of a Sub-distinction; they place the *Cypripedium* among the *Gynandria Diandria*: this is the first Section of that Class; for there is no known Plant which has a single Filament growing upon the Pistil.

The Rudiment of the Fruit is long and twisted; and its Style very short, and fix'd to the upper Lip of the Nectarium, terminated by a faint Stigma. Thus the farther we trace Nature in the Flower of this strange Plant, the more we shall find for Wonder.

With Respect to the Nectarium, 'tis a Part but lately understood in Flowers; and is not only conspicuous but singular in very many of them. There is no Article in which Nature so much wanders; nor any in regard of which her Purpose has been so much misunderstood.

The Nectarium universally contains a Honey-juice: this the too-wise PONTEDERA declar'd to be analagous to the Liquid in the *Amnion* of Females; and that it had great and necessary Use in giving Perfection to the Seeds.

Feb. This, farther Observation shews erroneous; for the male Flowers have their Nectarium and its Juice; where no Seeds are to ripen. The Willow is an obvious Instance of this; and it is found also in the male Flower of the common Nettle.

In some Plants the female Flowers indeed have it alone, as in the *Phyllanthus* and *black Briony*: in others 'tis found in both Kinds, as in the Butchers Broom of our Heaths and Commons.

In the *Columbines* and in the *Nigella's*, the Nectaria are so conspicuous Parts, that VAILLANT, tho' not accusom'd to Error, suppos'd them the Body of the Flower, and call'd the Petals Leaves of a Cup. The *Columbine* is a great Instance that the Nectarium is a distinct Part from the Body of the Flower; and that Truth is read as obviously in many others.

With regard to Form, there is no Part so inconstant: in the *Pinguicula*, and many more, it is a Spur; in the *Narcissus*, a Cup; and here, a kind of Bladder: nor is its Situation more certain; it is bury'd in the Crow-foot, and it crowns the Passion-Flower.

To those Kinds we refer, having describ'd them in preceding Numbers: from whence, and from the Structure of this of the *Cypripedium*, the Student will know a great deal of its Form.

The Seed-vessel that follows the Flower is of an oval Shape, mark'd with three Ridges form'd of three Parts; and contains in three distinct Cells numerous very minute Seeds.

Culture of the LADY'S SLIPPER.

Not *England* alone, but all the Northern *Europe* has this Plant wild in Woods: yet there are only few Spots where it thrives. In these the Aspect is South or South-West, but the Place perfectly shaded.

The Soil I have observ'd uniformly of one Kind, wherever I have seen the Plant; light, mellow, and a little Damp.

The Covering of fallen Leaves, and their finer Parts wash'd into a naturally loose and loamy Soil, as Manure, serve the great Purpose of raising this Plant perfectly: and this Soil thus understood, it must be our first Care to imitate.

Mix equal Parts of Earth from a rich upland Pasture, River-Mud, and the mellow Soil from under an old Wood-Pile: to a Load of this add a Bushel of moderate Sand; and dig in a good Quantity of fallen Beech-Leaves, the Sweepings of a Garden.

Throw up this into a Heap, and let it lie all Winter and a great Part of the succeeding Summer; turning it often, and frequently sprinkling the Heap with Water. Thus all will rot, mellow, and mix perfectly together; and thus will be form'd a proper Soil. This has never been done yet in any Garden, and for that Reason the Plant has never thrive perfectly in any.

This Compost will serve extremely well for several other Wood Plants.

In

Feb.

In *April* and *May* the wild Plants flower: they are earlier in Gardens where they have good Management: at that Period let a careful Person be employ'd to select the strongest that are in Flower; and the best of those which having risen from the last Year's Seeds, shew only Leaves. Let half a Dozen of those in Stalk be mark'd with Sticks, and twenty or more of the others.

When there are two Flowers on a Plant which is mark'd, let one of them be taken off. These are for Seed, and it will ripen best in that Manner.

At the latter End of *July* let the Seed Vessels of all these be carefully taken off, and wrap'd in Paper. Let them be laid on a Shelf in an airy Room, and take their Time to dry.

In the Beginning of *September* let the Roots which were mark'd for Strength, and have yet bore no Stalks, be taken up: in this will be required great Care. Let the Person take out with him a Basket, and some Pieces of thin Linnen Cloth.

Let him cover the Bottom of the Basket with Moss, fresh gather'd, and wet with Dew. Then taking up one of the Roots with a Ball of Earth about it, let him wrap it up in one of the Pieces of Cloth, and tie it loosely at the End, leaving the Bud out.

Let him lay this in the Basket upon the Moss, and thus proceed with all the others, packing them close, with some Moss, as occasion may require, between them.

Let the whole be cover'd with Moss, and the Lid ty'd close down, and let them be immediately deliver'd to the Carrier, if for a distant Place: they will thus preserve the natural Earth about them through a long Journey, and come to hand without Damage. At the same Time let the Seeds be sent in the Papers: for they are too small to remove.

Let the Compost be now brought to its Place, this must be to the South West, well shaded, and among Trees.

Let a Border be dug up, and the Mould taken out; and let the Compost be laid in its Place. Draw Lines lengthway and across at a Foot Distance; and in the Centre of each Square open a Hole, and plant one Root with its Ball of Earth.

When these are in, scatter the Seeds upon the Surface; and cover all one Inch deep with fallen Beech Leaves; thus leave the whole to Nature.

Feb.

The Roots in general will live, and a good Part of them will flower; but these will by Degrees grow weaker, and decay.

The great Quantity of Seeds will produce but a few Plants, but these will be lasting; they must be left standing where they rise be it ever so irregularly.

The whole Care of the Plants is this. All Spring they must be kept clear from Weeds, but the Ground between them must be cover'd with Beech Leaves. As they shoot Leaves or Stalks, they must be frequently water'd; and at the Approach of Winter the whole Bed must be cover'd with Leaves again.

In this Manner, tho' the transplanted Roots by degrees decay, the Seedlings will flourish lastingly.

If the Seeds do not shoot, as in some Places, tho' apparently well chosen, they never will, there must be a new Set of Roots brought in once a Year; and there is a Chance that Seeds ripen'd from the Plants which flower there, and falling spontaneously, may produce new Plants, tho' such as were brought from elsewhere and sown by hand would not.

This is of great Importance, because no Plant of the *Cypripedium* will retain its full Perfection Year after Year, but one that has stood without Removal where the Seed fell.

There is something extremely singular in the Shooting of the Seeds of this Plant, the *Orchis's* and *Helleborines*: no Art can secure it, nor Observation discover the Chances on which it depends; but all that can be done for it is what we have here directed.

Such a Border as this should be kept in every curious Garden: it will serve for all the scarce Wood Plants.

The *Fly Orchis*, the *Clandestina*, *Broom-rape*, and *Coral Toothwort*, will all thrive in it; and these are Plants, which, beside their Beauty, have the full Merit of Singularity; and will be the more valued in a Garden because few have raised them.

They may be brought to live by taking up the young Roots with large Balls of Earth; and such as sow themselves successfully, can never be rooted out of the Ground afterwards.

We are not to despair of this Success if no seedling Plants appear the first Season or two; for these small Seeds often lie two, three, or four Years quiet, and shoot afterwards.

5. WHITE PURPLE EDGED TULIP.

Plate
XXVI.
fig. 5.

The Tulips will in a little while burst upon us with a vast Glow of Beauty and Variety.

This is an early one, and claims from that Article a great deal of Merit: nor is it without much Elegance in its Simplicity: the Colours are no more than two, purple and white, but they are dispos'd happily.

The Student is to understand that the genuine, distinct, and real Species of Tulips are very few: Art has vary'd and multiply'd the Colouring of the Flower almost beyond Conception; but it is easy to trace all these Varieties down to one of the two or three original Kinds. This is one of those which Culture has least alter'd.

The Generality of Authors have named it among others, calling it *Tulipa*, and *Tulipa turcarum*.

LINNÆUS, *Tulipa flore erecto foliis ovato lanceolatis*; upright flower'd Tulip, with oval and lanceolated Leaves.

The Gardeners Names for Flowers are not only beneath the Notice of the Student, too low, too mean and vulgar, but they are too uncertain for any real Use. That which is given by one of these Persons, at one Time to a Flower, being given at another to one altogether different.

This Tulip is a Proof it was early called in England the *Pretty Betty*; and with some still retains that Title; but others having received Roots of other Kinds, under the same Name, apply it to them.

Thus nothing is certain about such Denominations: they convey no Idea of the Flower to which they are apply'd, and therefore may as well be given to one as to another.

It was to banish such vague Terms LINNÆUS constructed his truly distinctive specifick Names of Plants; and gave the World at once the Rule and the Example.

Something like this may be establish'd even with respect to Flowers; tho', as Varieties, they are not so distinct as Species, nor can be so well distinguish'd.

A Name that conveys some Idea should be apply'd to each: this we shall attempt, and this will at least in a limited degree be useful.

Thus the Name white, purple, edg'd Tulip, though it does not distinguish this Flower from every other Kind; nor could, unless lengthen'd beyond Breadth or Measure, yet gives a general Notion of its Colours, and their Disposition; and separates it from many.

The Root is a Bulb of a roundish oval Figure, cover'd with a pale Rind.

The Leaves are large, and of a greyish green. They are broad, hollow, and pointed.

The Stalk is ten Inches in Height, slender, round, and not very robust; but it supports the Flower erect from the Bud, not drooping as the little yellow Tulip, which is a Species ut-

terly distinct; and is like this, the Source of innumerable Varieties.

On the Summit of the Stalk stands the Flower, as in the other Tulips, naked, or without a Cup. It is but of the middling Size among these Flowers; and the Petals are pointed.

The Ground Colour is a pearly white, but round the Edge of each Petal is continued a broad List of elegant purple.

The Rib in the Midst of each Petal, has toward its Base also a light Tinge of purple, but this dies away as it advances upward.

This is the natural Colouring of the Flower; but the Gardeners Art enlarges its whole Form, diversifies the white with more Streaks of purple Rounds off the Petals; and introduces other Colours.

What we have described is its true native Colouring. It so glows in the Fields and Thickets of the East.

No Flower is fitter for the young Student's Examination. Nature does not afford any in which the Filaments, their Buttons, and the Rudiment, and Stigma are more distinct than in the Tulip.

All systematic Botany at present depends on these Parts, and it will be very proper for the absolute Beginner to take his first Lesson of them here.

We have observ'd there is no Cup. The Flower will give him a just Notion of what is called campanulated, Bell-shap'd. It is compos'd of six Petals so arrang'd, that they form a hollow Body, somewhat widening at the Mouth.

The Filaments are six, and they have large, oblong, upright, squared Buttons, placed free, and distant.

The middle Part is occupy'd by the Female Organs; and in these the Stigma is very conspicuous, altho' the Style is wanting. That Part usually rises from the Rudiment of the Seed Vessel, and supports the Stigma, but here that essential Organ rests on the Summit of the Rudiment itself.

This is very large, oblong, rounded, but mark'd with three high Ridges; and the Stigma which crowns its Top is of a triangular Form, and compos'd of three united Parts.

The Angles are furrow'd and split, and the whole remains, crowning the Seed Vessel to Maturity; when it is divided into three Cells within; and contains in each a great Number of Seeds, semicircular, plain, and placed in double Series, separated by chaffy Substances, resembling them in Form.

The Number of Filaments, six, shew that the Tulip is of the sixth Class in the LINNÆAN System, the *Hexandria*; and the single Stigma, for that is to be counted where there is no Style,

Feb. Style, shews it one of the *Monogynia*, the first Section of that Class.

The Culture of the Tulip we shall lay down

at large, treating of the finer Kinds in a succeeding Number.

Feb.

6. PSIDIUM.

Plate
XXVI.
Fig. 6.

A very elegant Tree, conspicuous for its Leaves, Flowers, and Fruit; and for its regular Growth worthy a Place wherever Exoticks are preserved.

Most who have of late written on Plants, have describ'd it, tho' not under this Title. Its Name in them is *Guajava*.

PLUKENET has called it, *Guajava alba acida*; and COMMELINE has well described and figured it; tho' in the Place of the Term *acida* he places *dulcis*.

This Author names also the Acid Kind as a distinct Species: but LINNÆUS with good Reason joins them, allowing this sweet *Guajava* only the Distinction of a Variety.

This Author calls the Genus *Psidium*; and as there is no other known Species, he adds no Epithet for Distinction: in his latest Work the Species *Plantarum*; tho' in the earlier he added, *ramis tetragonis*, and *caule quadrangulo*, the Squareness of the Shoots affording that Character.

In its native Climate it is a Tree of moderate Growth, five and twenty Foot in Height, and of considerable Thickness in the Stem. With us it requires the Heat of a Stove; and want of Air checks its Growth; but we have it from six to eight, or nine Foot in Height.

The Stem is firm and solid, and the Bark is brown. The young Shoots are green, ting'd sometimes a little with brown; and they first rise with four Ridges, giving them a square Appearance.

The Leaves are numerous and very beautiful; they are long, and they stand as it were crosswise upon the Branches: this gives at once an Air of Singularity and Fullness.

They have short Footstalks, and they are moderately broad, obtusely pointed, and somewhat undulated at the Edges.

Their Colour on the upper Side is a deep

and strong green: on the under Part they are paler.

The Flowers are numerous, large, and white; they rise on short Footstalks from the Bosoms of the Leaves, and have numerous Threads in the Centre.

The Fruit is large, oblong, and umbilicated, and is not unpleasant to the Taste.

The Cup of the Flower is of a campanulated Form, made of a single Piece, and divided lightly at the Edge into five oval Segments.

The Body of the Flower is composed of five Petals; they are of an oval Form, and inserted into the Cup.

The numerous Filaments are inserted also into the Cup. This places the Tree among the *Icosandria*. Amidst them rises an extremely long Style; this is single, and the Tree is therefore one of the *Monogynia*.

Culture of the Psidium.

The Seeds of the Fruit raise this Tree freely, and they are easily obtain'd from the *West Indies*, where it is very common: they must be raised in a Pot of rich Earth, set up to the Rim in a Bark-Bed.

When the Plants appear, each is to be set in a separate Pot, and this put into the Hot-Bed again.

When they are grown to some Size, they must be removed with their Ball of Earth into larger Pots, and they must be water'd occasionally; and Air must be admitted freely in the Middle of the Day.

Toward Autumn they must be removed into the Stove, and there set in a moderate Part: they will only require after this to be kept clean, and moderately water'd.



C H A P. II.

The Management of the Garden for this Week.

WEEDS will now begin to appear thick upon the Borders; and they will, unless removed quickly, disgrace the Gardener, and hurt the Roots of flowering Plants. The Intent is, that all the Nourishment the Border can afford shall be absorb'd by them; but these will

N^o 26.

have the greatest Share unless destroy'd. This necessary Business must be done with great Care.

The Buds from many of the Roots appear among the Weeds; and those of most others are form'd, and have made some Shoot, though they have not pierced the Surface.

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Feb. On the Preservation of these depends the early Shew, and regular Growth of the Plants. Therefore let all Care be taken not to injure any of them. No Person is fit to be intrusted with this Work but he who planted the Roots. No Hoe, or other large Instrument must be used.

The largest of the Weeds must be first pulled up by Hand; and when they are taken off the Surface must be broke, and the small ones destroyed with a Trowel.

After this let the Border be laid smooth with the same Care, and then let a Quarter of an Inch of fine fresh Mould be sifted over it.

This done, once in three Days, if the Season be dry, give a gentle Watering.

This must be done in a Morning, two Hours after Sunrise, it will wash in the finest Part of the new Mould, and set the Plants to growing.

It will be easy in this Work to see what Roots are not in a good Condition, and they should now be removed and replaced by others.

Perennial Sunflowers and *Asters* will succeed very well, planted now; and *Pinks*, *Rose Campions*, and *Bellflowers*.

We have given the Gardener many Instructions for keeping up a Succession of Flowers in the Garden, as of useful Herbage in the Kitchen Ground.

Feb. The *Romans*, whose Taste was at least as delicate and just as ours, valued the late Productions of the Garden equally with the early ones; nor does the *English* Poet express with more Regard

“There the first Roses of the Year shall blow.”

Than the *Roman*,

Rosa quo locorum

Sera moretur.

We have given Instructions for the early covering of the Ground with the *Ranunculus* and *Anemone* Kinds, and shall this Week direct the Gardener to prepare for late ones.

Let him dig up a Piece of rich Ground, and work in with it some fresh Pasture Earth. In this let him plant some Roots of large *Double Anemones*, and in such another Piece some *Ranunculus's*. Long after the Beauties of the Spring, in this Kind are gone; these will come into flower, and give a very pleasing Variety among the first Bloom of Summer.

We do not advise the planting elegant Kinds at this Season, for it is not so favourable as an earlier Period; but there are many gaudy ones of less Value.

SECTION II.

The Business of the SEMINARY for this Week.

THE *Cedar of Lebanon*, a Tree much esteem'd, may be propagated with great Ease in *England*; and as this is the Season for sowing the Seeds, we shall give here the general Directions.

Let the Gardener chuse an open Spot in the Seminary, where the Soil is dry. Let him scatter an Inch Thickness of the coarsest Sand over the Surface, and dig it in a full Spade Depth; mixing the Sand well with every Part of the Mould; and laying all fine.

Get two or three fresh Cones of Cedar from the East. There is no Difficulty in this; for the Tree is common, and they are yearly brought into *England*. Fix the Point of an Iron Spike in the Centre of the Cone, and strike the Head of it upon a Stone; thus shattering the Cone, and splitting it as the Point goes in.

Pick out the Seeds, and sow them regularly at four Inches Distance, rejecting such as appear bad. Cover them a Quarter of an Inch with the same Mould; and then set some Traps baited for

Vermin, about the Ground; and strew some Pieces of Furz-Bush over the whole Spot.

They will rise without any farther Care; and when they have got a little Strength, the Furzes must be removed, the Ground weeded, and some Mould carefully drawn up about the Stems of all the Plants.

One Piece of Furze-Bush should then be stuck up near each, and thus they are to be left through Winter.

When they have stood one Year, let them be removed into another Bed, and set at greater Distances; leaving in the Seed-Bed as many as can stand free enough; and let the stoutest Plants be left.

The others must be taken up with a good Ball of Earth, and immediately planted in a somewhat richer Piece of Ground; they must be ty'd up to Stakes, otherwise they will not grow strait. They will after this require only the common Care for bringing them to Perfection.

Feb.

Feb.

S E C T. III.

POMONA, or the FRUIT-GARDEN.

IN very forward Seasons this Week is the Time to finish all Pruning that may be yet requir'd for the Peach and Nectarine Kinds; and when this is done, and they are carefully nail'd to the Wall, they must be left to make their Shoots, assisting them by digging the Earth in the Borders; and, where the Trees are old, at greater Distances.

In Seasons less mild the Work may better be defer'd a Week or Fortnight longer. The Rule is this; do the Work when the Frosts have no great Power, and before the Buds are too much swell'd. If these tender Trees be prun'd in frosty Weather, the Wounds, where any thing large, do not well heal; and if it be defer'd till the Buds are grown too full, the Business cannot be done without destroying many of them.

This is a very proper Time for pruning the new-planted Trees in particular, because what Parts are dead will now be seen distinctly, and must be cut out.

The Nailing must be done with great Care. The placing the Branches horizontally is the principal Article for their bearing, but it stops their Growth in Length; for in Nature their Position is upright; and when thus laid flat, tho' they continue lively, they grow little at the End: Nature pursuing her own Course in sending upright new Shoots from the Sides.

The Use of the Training with a double Stem is here very evident. If the Trees have been planted at a proper Distance, the Shoots, from a single Stem, will reach either way far short of one another at the Time of Nailing; and as they grow little in Length afterwards, a great Part of good Wall wou'd be left uncovered; but when they are rais'd with a double Stem, short Branches serve the Purpose, and the Wall is soon covered with bearing Wood.

This must be the Practice in common Cases, but no general Rule suits all; and he is the best Gardener who knows how to make the most of the Place in the Condition wherein he finds it, in Things unalterable.

If the Walls be very high, just the contrary of this is to be practis'd. The Trees should be

planted nearer one another, and rais'd with a single Stem.

There is one great Error in those who are suppos'd the best Gardeners, relating to this Pruning. When a Tree is very vigorous and strong they defer it till *April*; and by this late Cutting damp the Force of the Growth. It does indeed answer the Purpose, but 'tis in a clumsy Manner, and with great Disadvantage: the Blossom-Buds are by that Time preparing to open, and many of them are destroy'd, which the Operator had no Design to hurt.

There is no Occasion for such Practices: there cannot be too many Buds upon a strong and healthy Tree; and the true Way to abate its over Vigour, is to let these blow and bear. This will lower the Spirit of the Growth much better, and much more safely than cutting out and shortening strong Branches at such a Time.

When the Trees are young, and the Walls are not well covered, this Practice is worst of all. These Trees, in such Circumstances, cannot be too strong: the disbudding them with Judgment in Spring, and displaying their Branches at all the Times of Nailing, answers the Purpose every way much better.

The Strawberry-Beds should this Week have a careful and thorough Dressing. The Strings must be taken off, the Weeds pull'd out by Hand, and the Earth stir'd and broke lightly and carefully, with a Trowel, among the Plants: after this, let a little fresh Mould, from a rich Pasture, be sprinkled in between the Plants, and gather'd about their Heads: they will shoot with great Vigour, and every Blossom be succeeded by its Fruit.

Let the Gooseberry and Currant Bushes have their last Dressing this Week; if any Branch have been left in, that had better have been remov'd; or any thing left at the Pruning, that now appears improper, let it be taken out.

Let the Earth be dug between and round about them; and if the Weather be dry, give them, at three Days Distance after this, a Couple of moderate Waterings. These Shrubs are in general too much neglected: they will thus flower earlier, and the Fruit will be better.

Feb.

Feb.

S E C T. IV.

CHLORIS, or the KITCHEN-GARDEN.

THIS Week let a Bed be dug up for a second Sowing of Celerl. A Piece of light Ground, open to the Sun, is the proper Situation and Soil for the Seed at this Time. We shall direct a third Sowing a few Weeks hence; and for that a different Mould and Situation will be needful: Moisture will be essential to the Success of that Crop, as Heat is to this.

Let the Seeds be covered a Quarter of an Inch, or thereabout; and to forward their shooting, if the Weather be dry, let them, after they have been a Fortnight in the Ground, have once in two Days some Water. This will bring them up a Week sooner than in the common Way, and that is an essential Point in the present Sowing.

At their first Appearance they must be clear'd from Weeds; and about two Months from the sowing of the Seed, the Plants will be fit for removing. Their farther Management we shall give at the due Time.

This Week let another Sowing of Lettuces be carefully manag'd, and let them be of the best Kinds.

Chuse for this Purpose a Piece of Ground open to the South, and shelter'd from cold Winds; and in preparing it for Sowing, dig in some well rotted Dung from an old Melon-Bed: then scatter the Seeds carefully in a still calm Evening, and throw a few Bushes over the Ground.

Let a Piece of light and mellow Ground be prepar'd for the *Dutch Parsley*, which is cultivated for its large Root. Let this be dug a full Spade deep, and perfectly well broken. Sow the Seeds carefully by Hand, not too thick, and rake them in.

The common Method is to sow this in Drills, but it is very injudicious: no Plant should ever be sown thus whose Root is the useful Part.

When these Plants appear they must be clear'd from Weeds, and thin'd to seven Inches Distance every way. The Weeding must be continu'd at Times; and afterwards it will be useful to hoe them up, cutting in as deep as may be with a strong Hoc. The Roots will thus grow larger in less Time, and be more tender and well flavour'd.

Look to the Beds of early sown *Spinach*: it will require careful Weeding; for otherwise the Cold, and the being rob'd of Nourishment by this wild Growth, will check it too much.

Some sow this in Rills; and in that Case the Earth must be very well broke between them:

but the best Method is free Sowing; and the Plants will now be fit for thinning: they may be left at four Inches Distance, taking up the weakest; and those which remain being thus clear'd, and the Earth broke about them, will grow faster than can be well imagin'd.

We have endeavour'd, on many Occasions, to recommend to the Kitchen-Gardener this Practice of frequent and careful breaking of the Earth about the Roots of Plants; and would have it understood in its full Force universally.

In the Field its Effect is prodigious: it exceeds all possible Belief without the Attestation of the Senses: and the ingenious Inventor of that excellent Method by Horse-hoeing, by which alone the Plants have the full Nourishment from this Source, while he extols that Method, acknowledges that it is inferior to the Spade.

What he has found universally is this; that one Plant thus kept clear, and assisted by breaking the Earth while it is growing, will equal in Bigness two, three, or four, of the same Kind planted in the common Way, and at the same Time exceed them in its Qualities.

The same will universally hold good in the Kitchen-Ground; and quick Growth is of manifold Advantage there; it brings Crops early, which is a great Advantage; it preserves them from Vermin: for they feed on sickly not on vigorous Plants; and it always renders them more tender and better flavour'd.

Let us bring this into Practice in the *Spinach* we have now mentioned: the Plants are at four Inches Distance at present, and the Ground being clear'd they will grow quick. The Gardener may, if he pleases, wait their Maturity: they will succeed very well; but he can in this Way do little to assist them afterwards: they will bear Hoeing, but that penetrates only a little Way into the Ground. We therefore advise that he give a Part of this Crop the Advantage of better Digging.

When the Plants are grown a little larger, let him take up the greater Part of them. Let him leave only a small Number, at such a Distance that he can dig between them with a Spade.

Those he takes up will be valuable for their Earliness; and let him once in ten Days dig up the Ground thoroughly between the others: he will have twice as much *Spinach*, and better, from these few Plants than from the Whole.

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A

COMPLEAT BODY of GARDENING.

NUMBER XXVII.

For the second Week in MARCH.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and curious Plants now in their Perfection.

I. BROAD-LEAV'D PENDULOUS-FLOWER'D CYTISUS.

March.
Pl. 27.
Fig. 1.

THE Gardener knows this Shrub under the Name *Laburnum*; and most Authors have treated of it under that Title: but 'tis with Reason LINNÆUS has refer'd it to the *Cytisus*: it has all the Characters of that elegant Genus; and no others. To call it by a distinct Generical Name would therefore be against Rule; and would introduce Confusion into the Science.

While we deny the Use of this distinct Name for obvious Reasons, 'tis proper we acquaint the Student that they had the Sanction of Antiquity, who employ'd it to distinguish this Shrub.

MATHIOLUS indeed objects, this cannot be the Tree which PLINY and the Romans call'd *Laburnum*, because that Author gives to his *Laburnum* Strings of Flowers a Cubit long: but this is not conclusive.

In England, where we raise the Shrub in Gardens, there is not this Length: but CAMERARIUS has cited judicious Persons, and of unquestion'd Veracity, to prove that where it is wild in warm and favourable Climates, the Clusters of Flowers are longer than PLINY's Measure of them.

Those among the old Authors, whose Doubts have prevented their adopting the Name *Laburnum*, join this with the *Anagyris*, distinguishing it Numb. XXVII,

from that, in its not stinking when the Leaves are bruis'd, by the Addition of *Non fetida*: but this is wrong: the Plant is as evidently distinct from *Anagyris*, as it is connected with the *Cytisus*.

LINNÆUS found the Characters those of this Genus; and, refering it hither, he adds, as its Distinction from the rest, *racemis simplicibus pendulis, foliis ovato oblongis*: *Cytisus*, with oval oblong Leaves, and simple pendulous Clusters of Flowers.

It rises to the Height of a moderate Tree.

The Trunk is covered with a brown Bark; the Wood is white and firm; and the young Shoots are slender and of a pale green.

The Branches are numerous; so that the Tree naturally forms itself into a handsome Head, and the Leaves cloath it with a great deal of Beauty.

These are plac'd in the trifoliate Manner; and the Footstalk is long, slender, weak, and cover'd with a light soft Down. Each of the three Leaves is oblong, broad, rounded at the End, and undivided at the Edges.

The Colour on the upper Side is a very beautiful fresh green, and on the under Part greyish.

The Flowers are very numerous and very pretty; a long Series of them hangs on a weak
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March. and drooping common Stalk; and they are separately large, and of a delicate yellow.

Their common Stalk is tender, downy, greyish, and with us five Inches long, or more: on this the Flowers are plac'd irregularly, each upon its separate short Footstalk.

The upper Petal, which is larger than the others, has some Blackness within, which gives no little Grace to the open Flower.

The Seed-vessel is a long obtuse Pod, and contains several Kidney-like Seeds. Even this Pod is not without its Beauty: tho' green at first, it acquires a fine brown afterwards; and when fully ripe is hard and glossy.

The Cup, receiving the Base of each Flower, is small, hollow, and divided into two Lips at the Rim. The upper of these Lips is split into two, the lower into three Parts.

The Flower itself is regularly papilionaceous, and is form'd of four Petals. The Vexillum is of an oval Form, it rises upwards, and its Sides turn back; the Alæ are plain and strait, and the Carina is hollow and pointed.

The Filaments coalesce into a long Body, only one is left loose: nine are in the Body, whose Opening on the Back is covered by the single one. The Style is single, and accompanies the Filaments in their rising Disposition.

The Student will, from these Characters, find no Difficulty in refering the Plant to its proper Class. This is the *Diadelphia*. It receives those Plants whose Filaments are thus connected into two Bodies; and is, in a Manner, peculiar to the *papilionaceous* Kinds. The Section to which this Tree belongs is the *Decandria*.

Culture of this CYTISUS.

It is a Native of many Parts of *Europe*, and thrives best where it has the richest Soil, and,

where with moderate Moisture, there is most Sun. March. This shews us the two great Articles of its Culture, a deep Soil, and a South or South-west Aspect.

It is to be rais'd from Seeds; and for these no Hot-Bed or other artificial Assistance is required: they grow freely in the open Ground, and defy our Winters.

Seeds ripen'd here will raise good Trees; but when there is Opportunity of obtaining them fresh from *Italy*, such will be greatly preferable.

They should be kept dry during Winter; and this is the Season for sowing them.

Let the Gardener now dig up a small Piece of rich Ground in his Seminary, and sow the Seeds not too close. Let him sift half an Inch of good light Mould over them; and scatter upon the Surface a few Pieces of Furze-Bush.

In the Beginning of *April* the young Plants will appear, and the Bushes are then carefully to be taken off.

A Fortnight after this, let them be weeded carefully by Hand, and thin'd where they crowd one another. After this Weeding give them a gentle Watering; and, unless natural Showers perform the Office, repeat this once in four Days for some Time.

Let them all Summer be kept clear from Weeds; and at the Approach of Autumn place a Reed-Hedge for their Defence against cold Winds;

In the Beginning of the *March* following, transplant them into another Bed, at two Foot Distance, leaving as many Seed-Plants unremov'd as will stand at such Distance in their original Bed.

They may now stand two, three, or four Years; and then will be fit to remove into the Garden, where they are to remain, among the Flowering-Shrubs.

2. ITALIAN PHILADELPHUS.

Pl. 27. This elegant Shrub is familiar to the Gardener, Fig. 2. tho' under another Title. Custom has strangely connected it with the *Lilac*, under one common Name *Syringa*. They are altogether unlike, and the Distinction is as old as *ATHENÆUS*. 'Tis his Name *Philadelphus*, which *LINNÆUS* has chosen for the proper Distinction of the Genus.

CLUSIUS has call'd it *Frutex Coronarius*; but, with the generality of others, the Addition of the Word *Alba*, *White Syringa* is us'd to distinguish it from the *Lilac*; as if the Flowers of that Shrub never were of that Colour.

Its Fragrance in the single State of the Flower recommends it greatly; but we here treat of the Shrub in a much more elegant State, the Flower adorn'd with numerous Petals, and the Scent less powerful, but not therefore less pleasing.

This is only a Variety of the common single *Syringa*: it has obtain'd the Name *Italian*, from

the first Appearance of it in that Country; and the Species is distinguish'd by *LINNÆUS* by the Addition *foliis subdentatis*: *Philadelphus*, with lightly indented Leaves.

It is a wild and irregular Shrub; but in its rudest Form is not without Beauty.

The Root spreads far under the Surface. The Stalks are numerous and slight, brittle though woody, full of Pith, and covered with a pale Bark. The young Shoots are slender jointed and green.

The Leaves are plac'd on short Footstalks; and they are large, and of a strong tho' not bright green. They are uneven on the Surface, pointed at the End, and irregularly indented at the Edges. Their Taste has the Flavour of a Cucumber.

The Flowers stand thick upon the extreme Branches, and are of a Snow-white, extremely beau-

March. beautiful and fragrant. They are compos'd of three or four Rows of broad Petals, and have in their Centre numerous Filaments. Their Smell is not unlike that of the Orange-Flower, but less rich: hence the Vulgar call the Shrub Wild Orange, and Mock Orange. The Fruit which succeeds these, is a Capsule; oval, pointed at each End, and surrounded in the Middle with the Cup.

This is the most elegant State of the Shrub; but 'tis in the single Flower the Student is to search the Characters and discover to what Class it belongs.

This is compos'd of four Petals: it is plac'd in a small Cup fix'd on the Rudiment of the Fruit, and divided into four Parts at the Edge. In the Centre stand twenty Filaments, crown'd with upright Buttons, mark'd with four Furrows.

The Student knows he is to trace these Filaments to their Origin, to find whether the Plant is of the *isofandrous* or *polyandrous* Class; that being the distinctive Character where the Filaments are so numerous. They are here inserted into the Cup, whence the Shrub is refer'd to the first of those Classes; and its single Style shews that it is one of the *Monogynia*, its first Section.

Culture of this PHILADELPHUS.

It is a Native of the warmer Parts of *Europe*, in the single State; and lives best where there is a mellow Soil, and some Moisture.

The double one is a Creature of the Gardener's Art, and therefore requires no different Soil from the single. There is, however, a Secret in regard to it which our People do not know.

The common Way of propagating it is by Suckers, and it thus degenerates: here and there only there appears, upon a Shrub thus rais'd, one double Flower, the others being all single; but it is not so where it is rais'd from Seed.

This therefore we recommend: and the Gardener will, by following that Practice, shew in *England* the same Elegance in this Shrub it boasts in other Countries where better cultivated: he will have whole Branches of double Flowers, and will no longer envy the happy *BESLER* that strange

Phænomenon represented in his faithful
This is the whole Secret.

With Respect to the common single Kind, it suffers nothing in the Propagation by Suckers; and as these are produc'd abundantly, and root freely, it will be best, in Respect of that Kind, to continue the same Method.

In *September* let the Suckers be clear'd from the old Trees, and planted two Foot asunder in the Seminary: they will require a little Water in dry Seasons; and at all Times to be kept clear from Weeds; and thus in three Years they will be fit to plant out into the Garden: where a deep rich Soil suits them best; but they will grow in any.

If the double Kind be rais'd from Suckers, the Shrubs will thrive very well, and they will here and there shew a double Flower; but a hundred will be single for one that has this Beauty. Therefore let Seeds be regularly obtain'd for this Kind, and the young Plants treated with the Care they deserve.

In *Italy* the double Flowers are frequently follow'd by perfect Seed-vessels, which ripen the Seeds well and freely.

Let some of them be obtain'd from thence, and sow'd with Care.

The second Week in *March* is the Time; and the Method is this:

Chuse a shelter'd Spot in the Nursery, and dig into the Ground a good Quantity of Pond-Mud: break it very fine, and scatter on the Seeds.

Cover them a quarter of an Inch with the same Mould, and throw a few White-Thorn Bushes upon the Ground: these defend the Place, and do not cover it so close as Furz: this is a Shrub whose Seeds will not grow, unless they have free Air.

When the Plants appear, let them have frequent gentle Waterings; carefully clear the Spot from Weeds; and from Time to Time, when the Mould is dry, draw up some about their Stems.

At the Approach of Winter stick up some Furz-Bushes about them, and among them, to break the Force and Sharpness of the Winds; and the next Year plant them out at two Foot Distance. They will rise to their full Perfection this Way, and will never degenerate.

3. DOUBLE LADY-SMOCK.

Pl. 27.
Fig. 3. This is a Wantonness of Nature in a wild Plant of our Meadows; from whence some Gardener brought into his Ground, and supply'd his Acquaintance.

This seems to have been the Case from what we know; for our Meadows at this Time frequently afford the *Double Lady-Smock*; and nothing is more uncertain than the raising it from Seed.

But tho' we receive it from the Field, it puts on a new Majesty in the Garden; the Flowers at-

tain three times their natural Bigness; and they have often a Blush of fleshy red, which gives them a new Lustre.

No Plant is more common than the *Single Lady-Smock* in our moist Pastures; and the Species is the same in either Case. The Doubleness of a Flower we have repeatedly told the young Botanist, is a Variety, no Mark of a separate Species.

All the Botanical Writers have describ'd the Plant in this simple State, and most of them under the Name *Cardamine*; some, *Nasturtium magno flore*; and

March. and others, after DODONÆUS, *Flos Cuculi*.

LINNÆUS retains the Generical Name *Cardamine*; and distinguishes the Species to which this elegant Variety belongs, by the Addition of *foliis pinnatis, foliis radicalibus subrotundis caulinis lanceolatis*: Pinnate-leav'd *Cardamine*, with the Pinnæ roundish on the Bottom Leaves, and on those of the Stalk lanceolated.

In Gardens the rounded Pinnæ are scarce; tho' common in Meadows, and the whole Plant is larger: this, and the Multiplicity of Petals to the Flower, is all the Difference.

The Root is thick, and furnish'd with innumerable long tough Fibres.

The Stalk is round, upright, and a Foot or more in Height, redish at the Bottom, and of a dark green upwards.

The Leaves are long and pinnated: their Colour is a fresh and lively green; and the Pinnæ are oblong, narrow, and pointed: they are of a tender Substance; their Footstalks are often reddish; and the main Stalk ting'd with the same Colour where they are inserted.

The Flowers are of the Breadth of a Shilling, swelling into Roundness from a small Base, and form'd in the Manner of a very double Rose, of innumerable Petals plac'd in several Series: these are narrow at their Base, broader to the Extremity, and there frequently wav'd and curl'd along the Edge.

Their Colour is usually Snow-white, and in this State they make a very delicate Appearance. We have observ'd that they sometimes get a Blush of Crimson, and this gives them a new Life and Beauty.

The Fruit or Seed-vessel is a Pod; but that, as also the Characters of the Class, are to be sought in the wild Plant, where the Flower is single. In this State the Multiplicity of Petals takes the Place of the Organs of Impregnation: no Filaments appear with Regularity; nor does the Fruit follow.

In the single and natural State of the Plant, the Flower is compos'd of four broad Petals, plac'd cross-wise; and has a Cup form'd of four oval Leaves. The Petals have very slender Bottoms, longer than the Leaves of the Cup.

The Filaments in the Centre of the Flower are six; and of these four are longer, and two shorter: they have all oblong, little, and heart-like Buttons.

The Rudiment of the Pod supports the Stigma without any intermediate Style; and the Pod which follows, is slender, and form'd of two

Valves, which separate with Violence when it is ripe, and roll back. The Seeds are roundish. March.

The fifteenth Class in the LINNÆAN System, contains those Plants in whose Flower there are four Filaments longer than the others: to that Class therefore the *Cardamine* belongs.

The Student will remember, that when these Filaments, in any Flower, are unequal in Length, the Class is to be sought not from their Number, but according to that Irregularity.

The Sub-division of this Class is made from the Form and Structure of the Seed-vessel, according to an old Distinction, into *Siliquosæ* and *Siliculosæ*: the *Siliquosæ* having long and slender Pods, and scarce any Remain of a Style at the End; and the *Siliculosæ* having shorter Pods, terminated by the Remain of the Style, equal, or nearly so, to the Seed-vessel itself in Length.

This Plant therefore belongs to the *Siliquosæ*, the second Division under the *tetradynamious* Class.

Culture of the DOUBLE LADY-SMOCK.

This is one of the hardy Plants which bear all Seasons in our open Borders, and require little Care or Culture: but unless a peculiar Place be chosen for it, the Plant will pine, and the Flowers never have half their natural Beauty.

We have directed the Gardener, in his Culture of Exotic Plants, to design his Compost and Situation according to the Soil and natural Place of Growth of the Plant, describ'd in Books: for this, upon the same Principles, he needs only to consult the Book of Nature, every Meadow will shew him the favourite Soil and Situation of this Plant; and this he is as carefully to observe in its Management.

Let him fix upon a low Part of the Garden, where Wet naturally lodges, and where there is not too much Sun. Then let him dig out the Mould, and put in its Place a Compost made of rich black Meadow-Earth, and one fourth Part Dung, from an old Melon-Bed; with this let him mix a small Quantity of coarse Sand.

In Autumn let him part the Roots of this Plant gather'd wild, if there be any double ones near; if not, let him procure some Roots parted from another Stock.

Let these be planted at ten Inches Distance, and cover'd one Inch with the Mould. Nothing more need be done than keeping the Ground clear from Weeds after this. The Plants will flower early the succeeding Year, and encrease abundantly.



1
*Broad leaved Pendulous
flowered Cytisus*



2
Italian Philadelphus



3
Double Lady Smock



4
*Broad leaved
Pulmonaria Long. Spiked
Cytisus*



Dwarf Pion

March.

March.

4. BROAD-LEAVED PULMONARIA.

Pl. 27.
Fig. 4.

This is another of the hardy Plants which early decorate our Borders in the open Ground; and need no more Care than their first Plantation.

It will live in any Soil or Situation; but will thrive most perfectly in a rich mellow Earth; where there is some Damp, and where there is Shade and Shelter.

It very well merits to have the Place carefully chosen; for not the Flower alone is beautiful, but the Leaves.

Most of the old Writers on Plants have nam'd it: but from their vague Denomination, *Pulmonaria*, a Title given to a great many Plants beside this, and altogether unlike to this or one another, the Gardener has been ill taught to call it *Lungwort*.

This *English* Name is only an uncertain and confus'd one, but the Plant has others altogether absurd.

It is call'd *Bugloss Cowslips*, and *Sage of Jerusalem*, tho' it neither is at all ally'd to the Cowslip, nor is a Native of that Part of the World.

Those who have nam'd it *Pulmonaria*, add many Epithets of Distinction, *Italica*, *latifolia*, and *maculosa*.

C. BAUHINE calls it *Symphytum maculosum*, as well as *Pulmonaria latifolia*.

LINNÆUS, retaining the latter Name for this Genus, banishes from it the unlike Plants; and adds here, as the Distinction of the Species, *foliis radicalibus ovato cordatis scabris: Pulmonaria*, with the radical Leaves rough, and of an oval heart-like Form.

The Root is compos'd of numerous thick white Fibres, of an insipid and mucilaginous Taste.

The first Leaves are numerous, and they spread themselves into a wild irregular Tuft. They are broad, short, and sharp-pointed, undivided at the Edges, and of a deep green, spotted variously and irregularly with white.

The Stalks are numerous, and six or eight Inches high, hairy, and of a pale green.

The Leaves on these are oblong, and have no Footstalks: they are of the same Hue with those from the Root.

The Flowers rise in a Cluster at the Top of each Stalk, and are oblong; not large, but very conspicuous, and finely vary'd according to their different Periods.

When in the Bud they are red; but when they open and shew the Inside, their Colour is a celestial blue.

There are usually, throughout the Season, a great Number of Flowers in both these States; and they set off one another very agreeably. The white Spots on the Leaves join also very happily in Contrast: and the most unaccustom'd Eye never passes the Plant unnotic'd. It is not of the Rank of a Flower, yet worthy a Place in
N^o 27.

every Garden.

The Flower is compos'd of a single Petal, and is plac'd in a tubular Cup. This is form'd also of one Piece, and is mark'd with five Ridges, and divided by five Indentings at the Rim. The Flower also is tubular in the lower Part, and at the Edge is divided into five broad Segments, which stand wide open. In the Opening of the tubular Part are plac'd five very short Filaments, and these are terminated by erect convergent Buttons.

The Style is single, tho' it rises from a four-parted Rudiment of a Fruit: the Seeds which follow are four, and they stand naked in the Cup.

The five Filaments shew the Plant to be one of the *Pentandria*, the fifth of the LINNÆAN Classes; and the single Style declares it one of the *Mono-gynia*.

Culture of this PULMONARIA.

The Plant is a Native of the colder Parts of Europe, as well as the warmer, and will live freely in any Situation. It thrives best wild by the Sides of Woods, where the Earth is rich and light, and not too wet.

This is the Rule for its Cultivation:

A Place should be chosen where the Sun has not too much Power; and the Soil should be fresh Pasture-Earth, with some rotted Cow-dung.

It may be rais'd from Seeds sown in such a Spot, and left to Nature: but it is so common, and thrives so well from parted Roots, that few will take this Trouble. It is however very right to be done.

We propose to teach the Gardener how he shall raise the most common Things to their greatest Perfection; and shall give, in the Management of this Plant, an Instance, by which it will very much exceed all of its Kind seen in common Gardens.

Let a Piece of a Border be chosen in a South-East Aspect, and in a low Part of the Ground: let the Mould be dug out, and fresh Pasture-Earth put in its Place.

In this, about the Middle of *October*, plant some parted Roots of the *Pulmonaria*, at a Foot and half Distance; and at the same Time scatter a good Quantity of the Seeds over the Surface between.

In Spring the parted Plants will flower, and the Seedlings will appear. Let them be kept clear from Weeds, and have at Times a little Water.

In Autumn take up the parted Roots, and thin the Seedlings to a Foot asunder.

In the following Spring these will flower very well. At Autumn let them be taken up, the Earth dug out of the Border, and fresh Mould
4 M from

March. from a Pasture, with some rotted Cow-dung | Inches Distance; and the next Spring they will March.
 — put in. In this let them be planted at fifteen | be in their full Beauty.

5. LONG-SPIKED CYTISUS.

Pl. 27. There is no Plant of its Kind so singular as
 Fig. 5. this, nor any one so beautiful. The *Cytisi*, in
 general, are very ornamental in our Gardens, but
 this deserves its Place beyond them all.

The old Writers have been acquainted with it: they
 have call'd it, simply, *Cytisus*, some *Pseudo Cytisus*,
 and *Cytisus nigricans*. It is the second enumerated
 by CLUSIUS, and thence has also been distinguish'd
 by *Cytisus secundus Clusii*.—So servilely has it been
 a Custom with Authors of superior Merit to copy
 those before them.

C. BAUHINE calls it *Cytisus glaber nigricans*,
 the smooth black *Cytisus*: a Name as indetermi-
 nate, as the other is unmeaning; yet by one of
 these two it is generally known among Nursery-
 men and Gardeners.

LINNAEUS has taught those, who can under-
 stand him, better: he retains the Generical Name
Cytisus; and adds, *racemis simplicibus erectis, fo-*
liolis ovato oblongis: Cytisus, with upright undi-
 vided Clusters of Flowers, and oblong oval
 Leaves.

The Root is woody, blackish, spreading, and
 hung with a few strong Fibres.

The Stem is woody and as thick as a Child's
 Arm, five Foot high, and naturally spreading
 into many Branches; so that, when well train'd, it
 makes a good Head and an elegant Figure.

In its natural Growth there rise usually many
 small Shoots, instead of one main Stem; but
 this Way it has less Beauty.

The Bark is brown, the young Shoots are
 green, with a Tinge of redish; and toward the
 Tops they have a silky Down.

The Leaves stand three upon each Footstalk,
 except that, at the Summits of the Branches,
 near the Spikes of Flowers, there usually are a
 few single ones, slight, and imperfect, and with
 scarce any Footstalks.

The Stalks of the others are ting'd with
 brownish, where they join the Branch. The sepa-
 rate Leaves are of a Figure approaching to oval,
 but too long for that Name; and they have a
 strong brownish Middle Rib. Their Colour is a
 deep dusky green upon the upper Side, and they
 are hairy and pale below.

The Flowers are extremely conspicuous and
 beautiful; they terminate all the Branches when
 the Shrub is well manag'd, and the whole Head
 appears of gold. They are arrang'd in very
 long upright Spikes, and their Colour is the most
 glorious yellow that can be conceiv'd; they are
 not small in themselves, and in the Spike are very
 pompous; they stand close, crowding one ano-
 ther, and open in a long Succession.

The Characters of the *Cytisus* Flower we have
 already given under the first Head in the present
 Number, and need not repeat them at large here.
 This agrees in them: the Cup is bilabiated, and
 the Flower papilionaceous: the Filaments are
 ten, in two Assortments, and the Seed-vessel a
 long Pod. The Plant is therefore one of the
Diadelphia Decandria.

As it agrees with the first nam'd Kind in Cha-
 racters, so it does in Culture. The Seeds shoot
 freely; and, being a Native of *Europe*, it bears
 our Winters. It requires moderate Waterings,
 and the Soil fresh Pasture-Ground.

6. DWARF ORIENTAL PIONY.

Pl. 27. This is a very singular and valuable Plant,
 Fig. 6. more familiar in the *Dutch* than in the *English*
 Gardens, but very worthy to be extended, from
 among the few who have it with us, universally. Its
 humble Growth and pleasing Colour give it great
 Recommendation; and its early Appearance
 more.

The candid Reader will not expect that every
 Plant we describe in Succession, in these Numbers,
 will rise to flowering at our Call, in a Season so
 severe as this has been; nor that in any Year
 these Things answer exactly. There are some-
 times Springs as remarkably forward as the late
 Frosts have made this backward; and there are

Situations in which Plants flower earlier than
 usual; the peculiar Day or Week of any cannot
 be determined.

This is a very early Piony, and has been
 thence nam'd by the common Writers; that and
 its humble Stature furnishing the Distinction,
 they have call'd it *Peonia pumila*, and *Peonia*
præcox.

LINNAEUS retains the Name *Peonia*, but he
 gives it to all the Kinds without Distinction, sup-
 posing the male, the female, and promiscuous
 Piony, Varieties from one original Stock.

This is more different from them all, than they
 from one another; but whether it claims the ab-
 solute

March. solute Rank of a Species distinct from them, we shall not (without more Proof from repeated Experience) decide, against the Opinion of one so justly respected.

The Root is tuberous and irregular: compos'd of numerous oblong fleshy Parts, connected by long Fibres.

The Leaves are divided in an irregular and uncertain Manner, into many Segments, and these are of a firm Substance. On the upper Side they are of a deep blackish green, with white Veins, ting'd about the Base with Crimson; and their under Side is greyish.

It is round, firm, upright, and ten Inches high, usually single, and the Support only of a single Flower.

This Stalk is purple at the Base, of a pale green upwards, and smooth.

The Leaves on it are rarely more than two: they are plac'd at Distances; one near the Ground; and the other not much below the Flower. These resemble those from the Root, in Colour and in Substance: they are also divided at the Edges with the same Irregularity, and their Veins ting'd more deeply.

The Stalk is red where they adhere to it; and a faint dying Tinge of the same Colour diffuses itself over a small Part of them from the Base.

One Flower, we have observ'd, usually and naturally terminates this undivided Stalk. This is very large, but not double, various in Colouring: but in whatever Degree it possesses the Crimson, that is naturally so conspicuous in its Petals, it is very full of Beauty.

The Florist will have great Reason to pride himself upon the Variety of Colouring good Management will give it; and to the Botanical Student it will be valuable, because the Parts are large, and he will trace the Characters with Ease.

The Flower in the Plant's wild State, wherein it paints at early Spring the Mountains of *Navarre*, varies in Colour thro' all the Degrees of Red, but most frequently it is of a pale Crimson; sometimes altogether white: in Gardens it will be brought to much more Beauty and Variety.

Beside the pure Snow-white, and the various Degrees of Red seen in different Flowers, well-manag'd Seedlings will be painted like some of the Tulips, the Body of the Flower white, and this diversify'd with Clouds and Streaks, and Veins and Blotches of the finest Crimson. 'Tis thus we have represented it; and to this Perfection we shall lead the careful Gardener to raise the Plant.

The Student in our Science, neglecting these light Ornaments, traces the Form and Structure of the Flower, its Parts and Characters; for this Purpose let him select one of the least luxuriant Plants: on those most valu'd by the Gardener there are usually six Petals in the Flower, but this exceeds by one the common Number; he will find them five in the most natural Flower, very broad, small at the Base, and moderately expanded.

The Cup is form'd of five hollow Leaves, of a pale green, on the Outside, and ting'd within with red. In the Centre are plac'd a vast Number of fine slender Filaments, thirty or more; and at their Tops stand large, oblong, and square Buttons.

The Rudiment of the Fruit forms two Bodies, on each of which, without any intermediate Style, rests a single compressed Stigma. The Fruit that follows, is form'd of two Capsules, large, and crooked.

This is the common and most natural Construction of the Parts; and by these the Plant is refer'd to the *Polyandria Digynia*; the numerous Filaments rising not from the Cup but Receptacle; and the Stigmata, tho' there are no Styles, being two. But this, tho' the common, is not the certain Number in these female Parts: Nature in no Flower wantons more than in the Piony. Frequently in this and the other Kinds, the Seed-vessels are three, four, or even five; but these are accidental Changes.

Culture of this Piony.

The Plant is a Native of *Europe*, and thrives best in the most temperate Climates. It is found on the Sides of Mountains, and in the Neighbourhood of Springs.

This we must endeavour to imitate in the Garden, tho' it is not very easy: and the nearer we approach to it, the more perfect we shall make the Plants.

The parted Roots propagate it freely, and successfully enough; but the elegant Method will be to raise it from Seeds.

Let a Part of the Garden be chosen in an open elevated Spot, where Rains take their Course toward the lower Ground, or where the Drippings of some Eves of a Building fall upon a higher Spot at little Distance. Here dig out a Border; and having remov'd the Earth, throw in the following Compost:

Mix four Parts of rich Meadow-Mould with one Part of rotted Dung from an old Melon-Bed: fill the Place with this, level the Surface, and scatter over it the Seeds gather'd from a strong growing Plant; no Matter for the Colour. Sift on a Quarter of an Inch of Mould, throw some Bushes over the Ground, and leave the rest to Nature.

The Plants will rise freely enough, and they will require little Care. The Weeds must be at Times destroy'd; and now and then the Bed must have a gentle Watering.

The succeeding Autumn there must be half an Inch of fresh Meadow-Earth, without any Mixture, sifted over the whole Border; and the next Spring the Plants will flower. There will be many Degrees of Colouring among them, and some elegantly painted.

The inferior Kinds must be taken up the following *September*, and planted out in other Places, and the finer Plants left at a Foot Distance.

Let the Bed be again refresh'd in Autumn with a new Covering of Mould; and the next Spring will

March. will shew their full Glory. The Mould must be drawn up about their Stems as they rise, and frequent gentle Waterings must be allowed, to March. swell the Flowers.



CHAPTER II.

The Management of the Flower-Garden, Greenhouse, and Stove.

IF any Part of this Ground be left vacant, or require Variety, this Week the Gardener may plant many of the biennial and perennial Flowers: *Golden Rods, Perennial Asters, Columbines, Bupthalmums, and French Honeysuckle*; but as the Season advances, more Care must be taken in the Plantation, or they will flower weakly the first Year.

Let the Places be all mark'd and Holes open'd for the Roots before any are taken up: let the Holes be larger and deeper than at other Times; and let the Mould at the Bottom be well loosen'd, and chop'd fine with a sharp Trowel.

This done, let the Roots be taken up in the Nursery, with very large Balls of Earth, and brought carefully upon a Spade one at a Time: let them be set even in the Hole; and when they are in, let the extreme Fibres be spread out with a Stick, cut smooth for that Use, and their Ends then snip'd off with a Pair of sharp Scissars. Then let the Mould be thrown in lightly and carefully from the Blade of a Trowel; and the Hole being fill'd up, let a little be sifted over the Crown of the Root: then give a gentle Watering, and the next Day a larger.

Quickness in the doing all this is a very great Article for Success. The Air shrivels up the naked Roots, and does more Hurt than is usually thought: it is avoided by these Precautions. And when I have stood over the late Removals of Plants myself, I have found them thrive the better for them; instead of receiving any Check.

With this Care, the Removal answers the Purpose of that useful digging about the Roots which we have so much recommended: and the Spring Plantation may probably exceed the Autumnal.

Little is known of this: no Part of the Gardener's Business is perform'd so ill. A Chop in the Ground with a Spade is their common Way of opening the Hole, and the fibrous Roots are doubled in and forced down in this unnatural Condition with the same Instrument; and mangled by its rough Edge.

Is it a Wonder these Plants thrive amiss? Where can there be Hope in such a rude and ignorant Plantation! Yet this is all. 'Tis therefore we read in those among them, who have undertaken Authorship, the great Advantage of an Autumnal Plantation. The Roots, say they, have Time to fix themselves in the new Ground before Spring; and indeed a great deal is requir'd to overcome such Management.

In the Way we propose, this Length of Time is not needful; and for these Plants we have nam'd, and many others, the Spring Setting succeeds full as well.

Two Things constitute the Difference between the Autumnal and Spring Plantation, in the Eye of Reason; the one is the Nature of the Plant, and the other the Condition of the Ground: the first is little known, and the other as little regarded. We shall propose both fairly.

With Respect to the Nature of the Ground, it has been justly determin'd by all Writers, that where that is dry, the Plantation is best made in Autumn; and where it is moist, in Spring. The Reason is plain; for the Roots which should grow, may, in the wet Soil, rot. This is known; and we need only caution the practical Gardener to pay a sufficient Regard to it.

As to the other, it depends upon the Principle of Growth, which in all Plants varies; and in some vastly.

A Willow Stake roots in the Ground, and makes a longer Shoot in two Years, than an Oak in ten. As this Principle is strong or weak, hasty or slow, in what appears above Ground in Plants or Trees, so it is also with Regard to their Roots. All are to be cut off at the Ends in Planting; and all shoot new Fibres from the Part thus wounded; but it is done slowly in some, and readily in others. On this depends the Choice of a Spring or an Autumnal Transplantation for different Kinds, supposing the Soil equal.

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Having thus explain'd the Reason of our particular Directions concerning different Plants, which we are sensible have often, and will, as often as others are wrong, be different from theirs, we shall confine ourselves under the separate Heads to practise; directing the Autumnal Plantation of some, which are the slow Shooters; the Spring for such as send out new Roots more freely; and leaving the Gardener his Choice for many others, where this Point is equal.

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Therefore let these Hoops be high, and let the Covering they are intended to support, never be us'd but when it is wanted. Not in all Nights, but only such as are frosty; and, if the Days be severe, let it be kept on, except two Hours at Noon. Thus the Medium will be preserv'd, the Plants will be at once defended and hardened, and will flower in all their natural Lustre.

Dig up little Patches in several Borders, for Tufts of hardy annual Flowers. Rake the Surface even, scatter on the Seeds, and sift a light Covering of Mould over them. Throw a few Bushes or some Pea-straw over the Surface, for a few Days: it warms and mellows the Ground, by retaining its natural Moisture; and the Seeds swell more freely.

The *Flos Adonis*, the *Dwarf Annual Stock*, and *Lobels Catchfly*, sow'd this Week, will answer very well. They are not to be transplanted; but the small Piece where they are sown is to remain cover'd with them. All they will require after this will be to be thin'd to proper Distances, fix

eight, or ten Inches, according to their various Growth; to be kept free from Weeds, and now and then to be gently water'd.

Let the Gardener save his own Seeds for these Purposes; for there is little Dependance on what can be bought. It has been gather'd unripe, or kept amiss, or it is stale: any of these Accidents may be unperceiv'd by the Eye of the Buyer; and yet the Disappointment will be certain. Perhaps no Plant will rise; at best, a few, and those poor and starv'd.

Let the Grass-Walks, not yet trim'd, be now cut at the Edges, and put in Order, and let the Borders be kept clean.

The open Ground being in this Condition, it will be Time for the Gardener to look again with a careful Eye, over his Stove and Greenhouse. Let him see every Plant be clean from Filth, and not a dead Leaf left. Let him admit Air more freely than before, chusing the Middle of a mild Day for that Purpose; and let the Waterings be encreas'd in the same Proportion as the Air is admitted. Let not a great deal be given at once to any, but let them have it often.

The Beauty of the Myrtles, for the ensuing Year, will depend upon the Regulation of Air and Water now; and the Oranges, and others of like Kind, will also thrive in Proportion.

This is the proper Time for reducing the Heads of Myrtles, and other Trees, where they are too luxuriant and irregular. If suffer'd to continue in this kind of Growth, they will soon become rough, ragged, and decaying: 'tis better to reduce them at once, and so prepare for the Beauty of many succeeding Years.

Let them be headed down with a careful tho' bold Hand; and when that is done, let their Stems be wash'd clean; the Mould upon the Surface in the Pots taken off, and fresh put in its Place; and when thus prepar'd, let it have moderate Warmth, to promote the Shooting.

Thus a new Head will be form'd full of vigorous Shoots, which the experienced Hand may reduce at Pleasure to due Shape; and which, when kept within Bounds, will flower profusely.



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Nº 27.

Cypress is also to be rais'd at this Time in the same Manner; and, tho' a slow Way, it is vastly preferable to any other.

The Earth for these should be dry, light, and fresh; and the Surface being laid perfectly even, the Seeds must be scattered on with a careful Hand.

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March. will shew their full Glory. The Mould must be drawn up about their Stems as they rise, and frequent gentle Waterings must be allowed, to swell the Flowers. to March.



CHAPTER II.

The Management of the Flower-Garden, Greenhouse, and Stove.

IF any Part of this Ground be left vacant, or require Variety, this Week the Gardener may plant many of the biennial and perennial Flowers: *Golden Rods, Perennial Asters, Columbines, Buphtalmums, and French Honeysuckle*; but as the Season advances, more Care must be taken in the Plantation, or they will flower weakly the first Year.

Let the Places be all mark'd and Holes open'd for the Roots before any are taken up: let the Holes be larger and deeper than at other Times; and let the Mould at the Bottom be well loosen'd, and chop'd fine with a sharp Trowel.

This done, let the Roots be taken up in the Nursery, with very large Balls of Earth, and brought carefully upon a Spade one at a Time: let them be set even in the Hole; and when they are in, let the extreme Fibres be spread out with a Stick, cut smooth for that Use, and their Ends then snip'd off with a Pair of sharp Scissars. Then let the Mould be thrown in lightly and carefully from the Blade of a Trowel; and the Hole being fill'd up, let a little be sifted over the Crown of the Root: then give a gentle Watering, and the next Day a larger.

Quickness in the doing all this is a very great Article for Success. The Air shrivels up the naked Roots, and does more Hurt than is usually thought: it is avoided by these Precautions. And when I have stood over the late Removals of Plants myself, I have found them thrive the better for them; instead of receiving any Check.

With this Care, the Removal answers the Purpose of that useful digging about the Roots which we have so much recommended: and the Spring Plantation may probably exceed the Autumnal.

Little is known of this: no Part of the Gardener's Business is perform'd so ill. A Chop in the Ground with a Spade is their common Way of opening the Hole, and the fibrous Roots are doubled in and forced down in this unnatural Condition with the same Instrument; and mangled by its rough Edge.

Is it a Wonder these Plants thrive amiss? Where can there be Hope in such a rude and ignorant Plantation! Yet this is all. 'Tis therefore we read in those among them, who have undertaken Authorship, the great Advantage of an Autumnal Plantation. The Roots, say they, have Time to fix themselves in the new Ground before Spring; and indeed a great deal is requir'd to overcome such Management.

In the Way we propose, this Length of Time is not needful; and for these Plants we have nam'd, and many others, the Spring Setting succeeds full as well.

Two Things constitute the Difference between the Autumnal and Spring Plantation, in the Eye of Reason; the one is the Nature of the Plant, and the other the Condition of the Ground: the first is little known, and the other as little regarded. We shall propose both fairly.

With Respect to the Nature of the Ground, it has been justly determin'd by all Writers, that where that is dry, the Plantation is best made in Autumn; and where it is moist, in Spring. The Reason is plain; for the Roots which should grow, may, in the wet Soil, rot. This is known; and we need only caution the practical Gardener to pay a sufficient Regard to it.

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March. The proper Quantity to be sown is such, that they may lie at about three Inches Distance. The best Depth for covering them is a Quarter of an Inch, and the Mould should be sifted over them.

They require nothing after this, if the Season be wet; but if it prove a dry Spring, the Bed should be water'd once in a Week; and after the first of these Waterings, there should be a Quarter of an Inch of fresh Mould sifted over the Ground. This will cover those Seeds the Water had laid naked; and after this there will be no Danger.

When they are risen to a little Height, let there be a few pull'd up where they have chanc'd to rise too thick; for in all these Cases the destroying of one is the saving of the other. If

both stand they will be good for little.

After this they must be kept free from Weeds, water'd in Summer, and defended by a Reed-Hedge in Winter; and thus they will take their two first Years Growth.

After that they will be fit for Removal.

Let a Piece of Ground be dug in *March*; and in the Beginning of the *April* following, let a cloudy Day be chosen for their Transplantation.

Let Holes be open'd at two Foot Distance; and the young Trees being taken up, with a good Ball of Earth to the Roots, let one of them be planted carefully in each Hole, closing the Earth well about it, drawing up some Mould to the Stem, and finishing all by a gentle Watering.

March.



S E C T. III.

POMONA, or the FRUIT-GARDEN.

MOST Kinds of Fruit-Trees may be yet planted where that has been omitted before; but there must be the more Care us'd in doing it, in Proportion as the Season is more advanced.

The Wall-Fruit of the earlier Kinds, will, in favourable Situations, be swelling the Blossom-buds, and preparing for the Bloom. This may be greatly forwarded in mild Weather by Art; and in such as is more severe, there will be Occasion for the same Caution to defend them.

If Frosts are severe when the Buds are thus swollen and forward, let a Mat be hung at Night from the Top of the Wall, and kept off from touching the Branches, by small Pegs driven into the Crevices for that Purpose.

This will defend them from the Severity of the Weather; but, like all other of these Defences at this Season, it must only be allow'd when absolutely necessary; for if the Covering be kept on too long, the Shoots will be made tender; and they will fall afterwards upon the slightest Accident. Therefore the sharp Weather is all the Time they must be allow'd the Covering, and all Opportunities taken of removing it when milder.

If the Season be, on the other Hand, very favourable, and they come forward without Danger, this will be greatly assisted by a little Moisture.

Let some Water be set four and twenty Hours in the Greenhouse; and about Ten o'Clock in the Morning let the Gardener, with a large Brush, sprinkle it carefully over the Branches.

Let him remember, this can only be done with Safety when the Air is settled mild: Frosts would have double Power from it; but in those gentle Seasons of which we speak here, the Moisture

will encourage the swelling of the Bud; and it will open freely and successfully.

In our Directions for the Autumnal Plantation of Fruit-Trees, we advis'd the Gardener in many Cases, to leave the Heads for that Time entire. Now is the Season for reducing them to a proper Quantity, and it must be done with Care.

According to the Strength of the Root, more or less must be left on at the Head; if that have been large and planted with a good deal of its own Mould, the Head need not be taken down farther than to five Eyes.

If the Root have been weakly, let the Head be taken to three Eyes; and let the Gardener use a sharp Knife, and make a Servant hold the Stem firm and steady, that he may not hurt the Root by shaking.

This done in the Garden, let the next Care be of the Trees kept to this Time in the Nursery, and intended for Dwarfs.

Such of these as were grafted the preceding Spring, must be now in the same Manner headed down to a proper Quantity of Top.

If they were suffer'd to grow up in Height, they would want that Thickening at the Bottom, which is so essential to a Tree intended for this Form; but when they are shorten'd to four Eyes upwards, there will rise Abundance of Side Shoots, supplying all that is wanted.

To secure this, let there be at the same Time that they are cut, a good stirring of the Earth about the Stem, and to the Distance of three or four Foot: and as the Season admits or requires, a gentle watering or two. Thus all will operate together. The Course of Nature will be directed to that Part where it is wanted, and the proper Shoots will be vigorous.

With regard to the Trees that were inoculated the

March. the preceding Year, we have directed the Method of cutting off their Stumps at four or five Inches above the Place; and it will be proper now to repeat the digging we have ordered for these grafted Trees also to them.

There is no Neglect so hurtful as that of new grafted and inoculated Trees; and there is no Part of the Ground, where Weeds especially, the deep rooting Kinds, can be more hurtful. There is no Method so good as digging up the Ground to destroy them; and there is the great Advantage also of conveying new Nourishment to the Trees by the same Operation.

This Week is the best of the Year in moderate Seasons for making a Plantation of Fig Trees. It is to be done either by Suckers or Layers, but the Method by Layers always produces the handsomest and strongest Trees.

Let the Gardener take Care that they have a good Exposure, and that the Soil be dry, and not too rich.

The Branches laid in the latter End of the preceding *February*, will be now fit for planting out, and the Border must be prepared for them in this Manner.

Let the Ground be dug up, and if any thing rich, let one third part of it be carry'd away. Mix up a Quantity of the Rubbish of old Walls, with the Brickbats not too large, but in good Quantity among it; throw in some Chips of Stone from the Masons, and add a small Quan-

tity of Coal-ashes and Wood-foot. Mix this well, March. and put it into the Border to supply the Place of the Soil that was carry'd away; and let it be well blended with the remaining Mould.

Let these be thoroughly broke together, and let the Roots of all Weeds be pick'd out. Some bury Couch Grass Roots at the Bottom, supposing the Depth choaks them: but I have found this pernicious Weed will rise from a great Depth, and will be more troublesome to get rid of afterwards than if the Source of it lay shallower.

Let the Quantity of the Rubbish added to the Soil be so considerable, that the Border when made up will be four Inches higher than the intended Level, for it will sink so much in a few Months.

The common Custom is to make these Borders narrow, but there is nothing so injurious to the Trees.

Let the Border for the Figs be ten Foot broad, and let it be descending from the Wall with a gentle Slope; about five Inches for ten Foot Breadth I have found most agreeable; and I believe half an Inch to the Foot in all Measures, is a very good Proportion for the Slope.

The Ground being thus prepared, let the last Year's Layers be taken off with Care, and planted regularly at five and twenty Foot Distance; fixing the Earth well to the Roots, and giving them a gentle Watering.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

THE Cucumber and Melon Beds must be at this Time watch'd very attentively; for one Night's Neglect may destroy all Hopes of their Produce. No exact Rule can be given what to do this Week; for, according to the Mildness, or Severity of the Season, the Care requir'd differs.

Let the Gardener examine the Heat of the Bed, and if he find it decline, which it will be very apt to do where the foolish Custom has been follow'd, of burying a Part of the Dung in a Trench for the Wet to settle among it; let him pile up fresh Dung in good Quantity against the Sides, to keep out the Frost, and renew the Fermentation within.

When the Nights are sharp, let Mats be drawn over the Glasses before Sun-set, and not removed till two Hours before Noon next Day.

Whenever there is a mild Day, let the Glasses be raised a little at Noon to admit the Air; and this is the most needful of all where fresh Dung has been laid up against the Sides. This occasions a new Fermentation, and the certain Consequence of that is a great deal of Steam.

If that is not let out in the Middle of the

Day, and the close damp Air of the Frame refresh'd by some fresh from without, the Plants will rot at the Stalks of the Flowers, and they will drop off. When the Severity of the Weather does not allow of admitting much Air, turn and wipe the Glasses.

This Week let a small fresh Parcel of Beans and Pease be put into the Ground. The Gardener understands what we mean by this, it is to give him the Means of a continual Supply during the Season.

The Trouble is little more than there would be in planting all his Crop in these Kinds at once; and the Consequence will be, that so long as Beans are to be had, he will be able to gather every Day a Parcel just in their Perfection.

These should be the constant Supply of the Master's Table, and there will be enough left on every Crop, when the Gathering is made from the next, for the other Tables.

While this new Plantation is made, let him take good Care of all the former. Let the Weeds be clear'd away from among them; and let him this Week chuse the Opportunity of some favourable Day when the Mould is crumbly, and draw it up carefully about their Shanks.

Let

March. Let a small Spot be dug up this Week also for some of the useful Herbs which are requir'd from the Kitchen Garden, though not in great Quantity; sow this Week *Dill*, *Borage*, and *Fennel*.

The *Borage* will take Care of itself; and the others will require no farther Assistance than to be kept clear from Weeds, while young; and sometimes water'd.

As the raising of Liquorice is understood to

be a part of the Kitchen Gardener's Business, among his useful medicinal Plants; we shall here give a practical Method of performing it, as done at *Pontefract* in *Yorkshire*, the most successful of our *English* Liquorice Plantations. We receive it from one of the principal Ground-workers on the Spot; and it contains the Result of many Years Experience: we shall therefore give it in his own Words.

To the AUTHOR of the COMPLEAT BODY of GARDENING.

SIR,

WHEN a Person in this Neighbourhood is inclined to have a new Plantation of Liquorice, he will chuse his Soil of a loamy deep Hazle Earth.

About Candlemas he will trench it three Feet deep, to be ready to plant about the Middle of March following; (after being covered over with a little rotten Dung) but if the Soil be of a heavy close Nature, he will give it a little Lime to lighten it; for Liquorice will not at planting take well in clayey Land.

After this is dug over again, they lay the Ground out into Quarters of moderate Width, according to its Extent or Form; then tread it out by a Line into narrow Alleys, at three Feet Distance; which Alleys are cast up into Ridges, and raked into the Form of a Carp's Back.

Before I speak farther of this, it is necessary to give an Account of the Plants, which are called Liquorice Buds. These are of two Sorts, the one called Stock-buds, the other Runner-buds.

The Stock-buds are such as are left in the Hand, when the Liquorice is cut off close, being the Root. The Runner-buds grow out Sideways from the Bottom of the Stock-buds, running under the Surface of the Ground, in the Manner of Hops: these after dressing the hairy Fibres off, are cut into Lengths of about four Inches, in which Length are generally two Eyes (like the Buds or Eyes of the Shoot of a Tree) which produce both Liquorice and Top-shoots. They are tied up into Bunches of about sixty Plants in a Bunch, ready to be laid upon the Ground for planting.

The Stock-buds must also be dressed, by cutting off all the dry Tops close to the Earth, and trimming away the small hairy Parts of Liquorice close to the Part where it was cut off; then are the

Pontefract, Feb. 15, 1757.

Buds of both Sorts ready for planting. But if the Ground or Season be not ready for them, lay them in Sand until the Time of planting in March, if the Weather permit.

When you plant your Liquorice, one Bed as above will take three Lines; one in the Middle or Top of the Bed, and one on either Side. Lay the Stock-buds down first at about two Feet Distance, and two Runner-buds betwixt them. This reduces them to about eight Inches Distance; plant them with Dibbers so as they may be covered in about three Inches under the Surface; rake the Ground, and the Planting is finish'd. But it is common to have a Crop of Onions in the Alleys, between the Beds the first Summer.

The Tops of Liquorice die to the Ground about Martinmas, which must then be cut off near to the Surface of the Earth.

It very rarely is taken out of the Ground until it have had three Summers Growth, and sometimes it is suffered to remain four, by which it pays by improving to a larger Size.

The Time of taking it up (by trenching of the Ground) is from Martinmas to March; which, after Dressing (the common Phrase used here) is to lay it in Sand until wanted.

I have great Satisfaction in the truly valuable Book you are publishing.

I am, SIR,

Your obliged humble Servant,

Joseph Perfect.

One Acre of good Liquorice will produce about seventy-five Hundred Weight.

The Produce of Liquorice in *Pontefract* in one Year, is about 370 Hundred Weight.

E D E N :

A

COMPLEAT BODY OF GARDENING.

NUMBER XXVIII.

For the Middle of *MARCH*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and curious Plants now in their Perfection.

I. DOUBLE-BLOSSOMED CHERRY.

March.

Pl. 28.
Fig. 1.

OUR Student knows the Multiplicity of Petals in a Flower does not raise the Plant, in which they are found, to the Rank of a distinct Species: where this is all the Difference, Botany considers the Double and Single as the same Plant; and in this Work, while we regard with the Gardener's or the Florist's Eye, the Beauty which results from such Luxuriance, we consider the Plant or Tree as the same with that which bears the simplest Flower; and refer thither for its Character.

The *Double-blossom'd Cherry* is a Variety of the common Kind; and indeed a very elegant one. Its Beauty has not escap'd the Attention of the Botanical Writers. C. BAUHINE, and the rest, name it *Cerasus hortensis flore pleno*.—The Student will know he is to refer it to the common Cherry; but he will be a little startled to hear the modern System takes away the Name *Cerasus* even from this.

LINNÆUS, whom all follow, refers the Cherry to the *Prunus* Kind; and our Botanist must, after him, call it *Prunus pedunculis simplicibus, foliis ovato lanceolatis, conduplicatis*: Single-stalk'd *Prunus*, with conduplicated Leaves, of an oval but spear-pointed Form.

In his former Works a shorter Distinction Numb. XXVIII.

serv'd this Tree, and he retain'd its usual Name *Cerasus foliis ovato lanceolatis*: the oval spear-pointed leav'd Cherry. This HALLER and VAN ROYEN follow.

The Tree will rise to a considerable Height; but it is better kept at an under Growth, with a full Head, that its Flowers may stand close, and give their Beauty distinctly to the Eye.

The Stem is covered with a dark brown Bark; the Branches are numerous and straggling; the young Twigs slender and tough.

The Leaves are numerous, oblong, of a Shape somewhat approaching to oval, but running out into a Point; serrated at the Edges, and of a deep green.

The LINNÆAN Term *Conduplicated*, which we have preserved in the Translation of the Name, regards the Disposition of the Leaves while in the Bud.

The Leaves of Trees are variously dispos'd while bury'd in that little Lump; and this Term expresses such as in that State lie with the two Sides parallel. We have express'd it in some of the less open'd Leaves in the annexed Figure.

The Flowers are double in a various Degree, on different Kinds, as the Gardener calls them: in some there are only three Rows of Petals; and in this State the Tree is call'd *Cerasus flore roseo*:

March. Let a small Spot be dug up this Week also for some of the useful Herbs which are requir'd from the Kitchen Garden, though not in great Quantity; sow this Week *Dill*, *Borage*, and *Fennel*.

The *Borage* will take Care of itself; and the others will require no farther Assistance than to be kept clear from Weeds, while young; and sometimes water'd.

As the raising of Liquorice is understood to

be a part of the Kitchen Gardener's Business, among his useful medicinal Plants; we shall here give a practical Method of performing it; as done at *Pontefract* in *Yorkshire*, the most successful of our *English* Liquorice Plantations. We receive it from one of the principal Ground-workers on the Spot; and it contains the Result of many Years Experience: we shall therefore give it in his own Words.

To the AUTHOR of the COMPLEAT BODY of GARDENING.

SIR,

WHEN a Person in this Neighbourhood is inclined to have a new Plantation of Liquorice, he will chuse his Soil of a loamy deep Hazle Earth.

About Candlemas he will trench it three Feet deep, to be ready to plant about the Middle of March following; (after being covered over with a little rotten Dung) but if the Soil be of a heavy close Nature, he will give it a little Lime to lighten it; for Liquorice will not at planting take well in clayey Land.

After this is dug over again, they lay the Ground out into Quarters of moderate Width, according to its Extent or Form; then tread it out by a Line into narrow Alleys, at three Feet Distance; which Alleys are cast up into Ridges, and raked into the Form of a Carp's Back.

Before I speak farther of this, it is necessary to give an Account of the Plants, which are called Liquorice Buds. These are of two Sorts, the one called Stock-buds, the other Runner-buds.

The Stock-buds are such as are left in the Hand, when the Liquorice is cut off close, being the Root. The Runner-buds grow out Sideways from the Bottom of the Stock-buds, running under the Surface of the Ground, in the Manner of Hops: these after dressing the hairy Fibres off, are cut into Lengths of about four Inches, in which Length are generally two Eyes (like the Buds or Eyes of the Shoot of a Tree) which produce both Liquorice and Top-shoots. They are tied up into Bunches of about sixty Plants in a Bunch, ready to be laid upon the Ground for planting.

The Stock-buds must also be dressed, by cutting off all the dry Tops close to the Earth, and trimming away the small hairy Parts of Liquorice close to the Part where it was cut off; then are the

Pontefract, Feb. 15, 1757.

Buds of both Sorts ready for planting. But if the Ground or Season be not ready for them, lay them in Sand until the Time of planting in March, if the Weather permit.

When you plant your Liquorice, one Bed as above will take three Lines; one in the Middle or Top of the Bed, and one on either Side. Lay the Stock-buds down first at about two Feet Distance, and two Runner-buds betwixt them. This reduces them to about eight Inches Distance; plant them with Dibbers so as they may be covered in about three Inches under the Surface; rake the Ground, and the Planting is finish'd. But it is common to have a Crop of Onions in the Alleys, between the Beds the first Summer.

The Tops of Liquorice die to the Ground about Martinmas, which must then be cut off near to the Surface of the Earth.

It very rarely is taken out of the Ground until it have had three Summers Growth, and sometimes it is suffered to remain four, by which it pays by improving to a larger Size.

The Time of taking it up (by trenching of the Ground) is from Martinmas to March; which, after Dressing (the common Phrase used here) is to lay it in Sand until wanted.

I have great Satisfaction in the truly valuable Book you are publishing.

I am, SIR,

Your obliged humble Servant,

Joseph Perfect.

One Acre of good Liquorice will produce about seventy-five Hundred Weight.

The Produce of Liquorice in *Pontefract* in one Year, is about 370 Hundred Weight.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XXVIII.
For the Middle of MARCH.

SECTION I.
FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and curious Plants now in their Perfection.

I. DOUBLE-BLOSSOMED CHERRY.

March.
Pl. 28.
Fig. 1.

OUR Student knows the Multiplicity of Petals in a Flower does not raise the Plant, in which they are found, to the Rank of a distinct Species: where this is all the Difference, Botany considers the Double and Single as the same Plant; and in this Work, while we regard with the Gardener's or the Florist's Eye, the Beauty which results from such Luxuriance, we consider the Plant or Tree as the same with that which bears the simplest Flower; and refer thither for its Character.

The *Double-blossom'd Cherry* is a Variety of the common Kind; and indeed a very elegant one. Its Beauty has not escap'd the Attention of the Botanical Writers. C. BAUHINÉ, and the rest, name it *Cerasus hortensis flore pleno*.—The Student will know he is to refer it to the common Cherry; but he will be a little startled to hear the modern System takes away the Name *Cerasus* even from this.

LINNÆUS, whom all follow, refers the Cherry to the *Prunus* Kind; and our Botanist must, after him, call it *Prunus pedunculis simplicibus, foliis ovato lanceolatis, conduplicatis*: Single-stalk'd *Prunus*, with conduplicated Leaves, of an oval but spear-pointed Form.

In his former Works a shorter Distinction Numb. XXVIII.

serv'd this Tree, and he retain'd its usual Name March. *Cerasus foliis ovato lanceolatis*: the oval spear-pointed leav'd Cherry. This HALLER and VAN ROYEN follow.

The Tree will rise to a considerable Height; but it is better kept at an under Growth, with a full Head, that its Flowers may stand close, and give their Beauty distinctly to the Eye.

The Stem is covered with a dark brown Bark; the Branches are numerous and straggling; the young Twigs slender and tough.

The Leaves are numerous, oblong, of a Shape somewhat approaching to oval, but running out into a Point; serrated at the Edges, and of a deep green.

The LINNÆAN Term *Conduplicated*, which we have preserved in the Translation of the Name, regards the Disposition of the Leaves while in the Bud.

The Leaves of Trees are variously dispos'd while bury'd in that little Lump; and this Term expresses such as in that State lie with the two Sides parallel. We have express'd it in some of the less open'd Leaves in the annexed Figure.

The Flowers are double in a various Degree, on different Kinds, as the Gardener calls them: in some there are only three Rows of Petals; and in this State the Tree is call'd *Cerasus flore roseo*:

March. in others the Series are much more numerous, and the Flower so full that it becomes globular. This is the most elegant State.

The Colour is a perfect white; and when the full Head of a small Standard Tree is profusely covered with them, it appears at some Distance a Ball of Snow; and the nearer it is view'd the more it charms.

Each Flower stands on its own Footstalk, which is tender, and of a pale green, stain'd with red. Many of these rise together, and the whole Cluster is very elegant. No Fruit follows.

Nature, exhausted by this Redundancy of the Petals, pursues her Course no farther. An Accident may leave a Fruit on some Chance Bough; but the natural Result is Barrenness.

Speaking of the Cherry in its double State, we must refer the Student to the common Blossom of our Fruiting-Trees, to find the Characters. He will perceive in that a vast Cluster of Filaments rising from the Cup, and crown'd with doubled Buttons.

He finds from this the Tree is one of the *Icosandra*; and, by its single Style, that it is of the *Monogynia*.

The Cup is form'd of a single Piece, hollow'd and divided at the Rim into five Segments. The Body of the Flower is compos'd of five broad Petals.

The Fruit needs no Description; roundish, juicy; and, in a hard Stone, containing a single Kernel.

Culture of the DOUBLE-BLOSSOM'D CHERRY.

The Propagation of the Double Cherry must be by budding upon the common wild Red Cherry Stock: and it is very well worth the Care; for there is not any Shrub of all the Flowering Kinds superior to it in Beauty.

Some use the common Black Cherry Stock for this Purpose, but it is a wrong Practice, for that is too strong a Shooter. The Red Cherry Tree, in its wild State, grows to less Height, and sends out more and shorter Branches.

This therefore would in itself be more proper for forming a small Tree with a tufted Head; and this the Gardener is to observe here, and on all other Occasions, in Respect of Grafting and Budding.

Altho' the Wood form'd afterwards be of the Nature of that from whence the Bud or Graft was taken, the Root remains the same as in the wild State of the Stock, and so do the Vessels of the remaining Part of the Trunk. These receive and transmit the Nourishment in their original Way; and this will influence the shooting even of the adopted Parts. Let this Rule be universal: and in no Point so strictly observed as in this.

Experience shews also another Advantage; the Red Cherry Stock is more durable than the

Black. With good Management, a budded Stock of this will form, in a few Years, a well headed Tree, and last without End. March.

These Stocks are to be rais'd in a Nursery-bed from Kernels; and when they have been two Years planted out they will be fit to bud.

This is the best Method of propagating the double flower'd Kind; but it is the most uncertain: however, the Danger is not much; for as Summer is the Season for Budding, if that fail, they may be grafted afterwards in Spring.

In the Beginning of *July* take off some Cuttings from a very fine double-blossom'd Cherry Tree, and chuse them from the healthiest Branches, and such as are most full of Flowers.

Look carefully over the Stock for a Part where the Bark is smooth and fine. In this Place cut it a-cross to a good Length, and then, from the Middle of this Cross cut, make a Slit downwards, half a Finger's Length. The Knife us'd for this Purpose, should have a short, firm, and sharp Blade, and a smooth flat Handle. Care must be taken, in both these Cuts, to go thro' the Bark perfectly, and not to wound the Stalk.

Take the Leaf from the Bud, but leave the Footstalk remaining; and make a Cut in this cross-wise, a Finger's Breadth below the Eye: then with the Knife slit off the Bud, with Part of the Wood; and take away that Part of the Wood that was left with the Bud. This must be done with Care, to prevent the Eye from being lost, which often happens in the stripping. In such Case the Bud is to be thrown away, and another chosen, proceeding with more Care, and leaving the Bud unhurt in its Place.

The Bud thus prepar'd, is fit for Use. The Bark of the Stock must be rais'd clear from the Wood, and the Bud thus prepar'd let in.

The Bark must be rais'd with the flat Handle of the Knife; and if the Rind left to the Bud be too much to go into the Slit, it must be cut away.

See that the Bud falls close and even with the Wood of the Stock, and that it be well secur'd by the Rind; then tye it round with some old Bass, soak'd in Water. The whole must be bound close and even, but the Eye of the Bud not crush'd or cover'd.

If the Bud has not been well join'd to the Stock, or if its Eye have been torn out with the Wood, or hurt in the stripping, it will decay in about three Weeks; so that such as continue plump and healthy at the End of that Time, may all be consider'd as good ones. The Tyeing is at this Time to be loosen'd; and this is the whole Operation.

The Spring following, the Head of the Stock is to be cut off at about a Hand's Breadth above the Bud, and the Tree will flourish. A Shoot will be made from the Bud, which must be gently ty'd up to the Head of the Stock, to secure it from

March. from Injuries. The Spring following, this Head of the Bud, and the Head from that Time will March. of the Stock must be cut off clean to the Place cover it.

2. PERUVIAN HYACINTH.

Pl. 28. 'Tis in Compliance with old Custom that we
Fig. 2. preserve here the Name *Peruvian Hyacinth* to this Plant; and that the Gardener may understand us at the setting out. He would be strangely surpriz'd to find us at once calling it by that Name which we are now to acquaint him properly belongs to the Plant, this is *The Conic flowering Squil*.

LINNÆUS has justly separated the Plants call'd *Starry Hyacinths*, from the common Kind known under that Name; and however bold it may to the unexperienced Eye appear in him, to have refer'd these all to the *Squil* Kind, he has the Authority of evident Nature, and has done it with perfect Justice.

The common Writers call this Species, after BAUHINE, *Hyacinthus Indicus bulbosus stellatus*; or, after CLUSIUS, *Hyacinthus stellatus Peruvianus*. This Name, shorten'd of its Epithet in Translation, has given the *English* Gardener his Term *Peruvian Hyacinth*.

LINNÆUS, very correct and distinctive in his Names of Species, calls this *Scilla radice solida corymbo conferto conico*: Solid-rooted *Scilla*, with a cluster'd conic Tuft of Flowers.

The Root is large, oblong, firm, and weighty, cover'd with a brown Bark, and sending out, from a prominent Base, many thick Fibres.

The Leaves are very conspicuous, tho' not more than four or five in Number: they are six or eight Inches long, considerably broad, hollow'd, obtuse, and of a fine green.

The Stalk is thick, juicy, and of a pale green. At the Top it forms a large Head, by sending out a Multitude of fine slender Footstalks. These are of a deep purplish Hue; and as they are longest in the lower Part of the Cluster, and shorter toward the Top, the whole Tuft is regularly of a conic Figure, thick, short, broad at the Base, and pointed.

The Flowers are extremely elegant in themselves, and this vast Tuft of them makes a most splendid Appearance. One terminates each of these Footstalks. The Size is considerable, the Form starry, and the Colour a celestial blue.

There is a Variety of the Plant in which they are white, and sometimes fleshy, or tinctur'd with a pale Crimson; but these, tho' beautiful, are far below the elegant and perfect blue which is the natural Colour.

In some well-cultivated Plants there is a Glow of purple with the blue, which is extremely beautiful. The various Mixture of the red, gives the violet Tinct to some, and to others a true purple: in all these Colours the Plant is of extreme Beauty.

As the Shortness of the Footstalks at first, in the upper Part of the Cluster, is owing only to their being

not so full grown as those below, the Continuance of the conic Figure of the Tuft depends upon the Manner of Flowering.

In the usual Way of managing the Plant, too much Sun prevents the perfect Opening of the upper Flowers; and the Tuft keeps, throughout the short Time of the Bloom, its original conic Form: but we shall direct the Gardener to manage it so that the whole Number may open in Succession; and in this Way the flowering of one Plant will continue a Month; and as the upper Flowers display themselves, the conic Form will swell into a kind of rounded Umbell: and the Gardener's Art shall set aside one Term in the LINNÆAN Name, dependent only on imperfect Management.

The Flower is compos'd of six Petals; these are of an oval Form, sharp-pointed, and display'd as the Rays in a painted Star. It rises naked from the Footstalk.

In the Centre stand six Filaments, smaller upwards, short, and crown'd with oblong incumbent Buttons. In the Midst of these rises a single Style from the rounded Rudiment of a Seed-vessel, which when ripen'd, becomes oval, with three Furrows, and contains, in so many Cells, numerous roundish Seeds.

No Plant more obviously shews its proper Class: it is one of the *Hexandria Monogynia* of LINNÆUS.

Culture of the STARRY HYACINTH.

The Name *Peruvian* given at first universally to this Plant, led People to believe it must be sought in that remote Part of *America*; but it was soon found nearer home.

CLUSIUS, and the others of his Time, receiv'd Notice from BOETIUS, that the Salt-Marshes and Meadows near the Openings of Rivers in *Spain* and *Portugal* abounded with it, in full Lustre.

Its Soil there is a black rich Mould, tender and moist, and a little impregnated with Sea Salt. This gives the true Rule for its Culture: this has been unobserv'd; and therefore the Plant has seldom in our Gardens, however much admir'd, arriv'd at its full Beauty.

The many propagate it from Off-sets; but to the Gardener who desires to excel his Contemporaries, the Method is from Seeds, and we shall direct him how to follow this Course successfully. In either Case, the Compost must be the same: and let it be prepar'd in Time in the following Manner:

Mix equal Parts of the richest black Mould from under the Turf in a Meadow, and pure River-Mud: add to a Load of these two Bushels of old Cow-dung, and two Gallons of SEA WATER.

Mix the Ingredients well together, and throw them

March. them up in a Heap, sprinkling on the SEA WATER at Times as the Heap is made up.

Let our Gardener keep strictly to the Direction we give him: Sea Water must be us'd; and if he fancies common Salt made into Brine is the same Thing, he will deceive himself. Sea Water contains other Ingredients beside the Salt: the Bittern with which it abounds, is compos'd of a vitriolic, acid, and an absorbent Base, and with this there is a bituminous Oil; great Assistants to Vegetation.

This just Observation is laid down in all its Force by Dr. HOME, an Author in whose small Tract * we find more Knowledge than in many Volumes before publish'd, and to whose Merit we are proud to give this Testimony; having seen the Doctrine confirm'd by repeated Experience.

Let this lie to mellow.

Observe what Plants flower strongest, and mark one of them for Seed; there will be a sufficient Quantity from a single Head: Let it stand till the Seed-vessels are perfectly harden'd, then cut it off entire, and lay it on a Shelf cover'd with Paper, and having a Ledge of Paper also to prevent any of the loose Seeds falling off; here they will harden in their Husks, and toward *August* they may be carefully shaken out, and spread loose upon the Shelf to prepare for their Sowing. This is a Thing not enough understood or consider'd.

When Seeds are put into the Ground without this hardening, their pulpy Substance rots before they can shoot; but when they are thus prepar'd, the Principle of Life in the Eye just begins to operate, before the Moisture brings on the destructive Fermentation.

Nature proportions the Firmness of this Substance, in every particular Plant, to the Principle of Life in the Bud. When that is slow of Growth, this Substance is more hardly mellow'd; when it is quick, this gets it just Consistence sooner: but, with this Preparation, hardening in the Air is always intended.

In the Course of Nature, Seeds remain in their Husks a long Time, many long after the Plant is dead; its dry Stalk yet supporting itself erect; and when the Wind shakes them out, they fall only on the Surface of the Ground, where they are not so immediately moisten'd. We often sow them too hastily, and usually bury them too deep. There is the more Need of this Caution therefore of drying them.

These Principles are universal: we take such Opportunities as occur most fitly for relating them; and the Gardener is to understand them, in general; not alone of the particular Subject.

In this Instance, the Seeds will be well dry'd toward the latter End of *August*, and they should then be sow'd in such a Manner as will give the Gardener Opportunity of managing them at his Pleasure, with regard to Sun and Shade.

Let a Couple of Boxes be nail'd up of rough Boards, six Inches deep, and four Foot by three in Extent. Mix up as much of the Compost as will fill these Boxes, with one fourth Part its

Quantity of middling Sand. It must be either *March* River Sand, naturally clean, or Pit Sand, wash'd by pumping on it till the Water runs off clear.

Mix these very well together, and fill the two Boxes; make the Surface fine and level, and scatter on the Seeds. Take a calm Hour, and spread them equally and not too close.

Sift over these a quarter of an Inch of the same Mould, and lay some Pieces of Bushes over them lightly, to prevent Accidents.

Set the Boxes in a Place where they may have the Morning Sun six Weeks; then place them open to the South, and allow them all the Warmth that can be: and when Frosts set in, cover them with a common Frame, such as is us'd for Hot-Beds. In the milder Days raise the Glasses; and when the Earth is too dry give gently a little Moisture.

In Spring the young Plants will appear, then remove the Bushes; but continue the Boxes under the Frame till all Danger of Frost is over, then set them out in a warm Place: keep the Surface carefully free from Weeds; and now and then allow a little Moisture.

As Summer advances, the Boxes must be mov'd again, and set where they have only the Morning Sun.

In *August* following, refresh the Roots with a Covering of a Finger's Breadth of the Compost all this Time mellowing for Use; and defend them from the Frosts.

The succeeding *August* is the Time for planting them out; and now the Heap of Compost comes into Use, let a Part of the Garden be chosen that has a South-East Aspect, and let the Earth of a Border be taken out; fill the Place with the Compost; lay the Surface level, and draw Lines lengthways, at four Inches Distance, and crossways at three.

The Bed will thus be mark'd out into long Squares: in the Midst of each open a Hole with a Trowel, broad enough, and two Inches deep; lay up the Mould at the Edge.

This ready, sift the Earth in the Boxes, and separate the Roots without injuring them. Plant one in each Hole; and draw in the Earth carefully over it.

At the Approach of Winter hoop over the Bed; and in hard Weather cover it with Canvas. In Spring clear the Ground of Weeds; and during Summer, at Times, water it. At Autumn sift on some fresh Compost half an Inch, and defend them during Winter.

This is the whole Management, and the Trouble of it will be very well repaid. The fifth Spring will shew their Flowers; and from the same Seed there will be White, Flesh Colour, Crimson, Blue, Purple, and Violet, in all the Tinges.

Let the finest be mark'd; and at the End of *August* following, let a good Bed of common Mould be prepar'd for the Reception of the others.

* "*Principles of Agriculture and Vegetation.*" The Essay which obtain'd the Prize of the *Edinburgh Society*.



1
Double blossomed Cherry

2
Peruvian Hyacinth

3
*Gold cup'd
Narcissus*

4
Double Jonquille

Double Primrose

Great Orange Daffodill

March. In the Beginning of *September* let them be taken up, and planted at a Foot Distance in the new Bed. Here let them stand two Years, that they may have full and fair Time to shew their Flowering. After this, let the best be preserv'd alone, and the others planted out in less regarded Places.

The fine Plants left in the original Bed, must stand at about a Foot Distance; and they also will flower much more beautifully the succeeding Year.

After this, they will only require to be kept at all Times free from Weeds; and once in four Years to be taken up.

At this Time the old Compost must be taken out of the Border, and its Place must be supply'd with a fresh Quantity got ready for that Purpose. The Off-sets must be taken off with Care at the same Time, and planted in a separate Bed, and the old Roots plac'd at regular Distances in the new Compost.

The last Week in *August* is the proper Season for doing this. The Roots should not be kept out of the Ground, but planted as soon as the Off-sets are taken off, the fresh Border is made up, and the Places mark'd to receive them.

3. GOLD-CUP'D NARCISSES.

Pl. 28. The Varieties of *Narcissus* rais'd by Culture are much more numerous than the Species we have from Nature: the Botanist, strictly decisive, owns but few; but in this Work we shall not omit the most considerable of the various Forms resulting from Culture, refering each to its original Kind.

This Kind is call'd somewhat at Random by our Gardeners, *Spanish Narcissus*; by some, the *Middle Spanish Narcissus*; and, by those who aim at more Distinction, a *Pseudo-Narcissus*.

LINNAEUS calls the Species, to which it belongs, *Narcissus foliis ensiformibus florum Nectario longitudine Petalorum*: Sword-leav'd *Narcissus*, with the Nectarium of the Flower equal in Length to the Petals.

In the common Growth this Species has the Rim of the Nectarium broad, but tolerably plain: in this State, Culture swells that Part into more Extent; and folds and plaits its Sides, and undulates its Verge.

The Root is roundish, full of a slimy Juice, and hung with many Fibres.

The Leaves are long, and of a pale green; at first they are hollow'd, but when they have stood some Time they spread out flat, and grow yet paler.

The Stalk is a Foot and half high, naked, edged, and of a deeper green; and on its Summit stands a single Flower. This is very large, and of considerable Beauty. Its bursts out sideways from a pale green Scabbard, which is, before this Opening, oblong, compress'd, and blunt at the End. This serves it as a Cup, and withers soon after the full blowing.

The Body of the Flower is form'd of six large Petals, oblong, broad, of a somewhat oval Form, and of a Nectarium which equals them in Length, and is folded and rump'd at the Sides, and at the Extremity expanded in Form of a Bell, with a wav'd, irregular, and sinuated Rim. This Gardeners call the Cup.

The Colour of the entire Flower is yellow; but in various Degrees. The Petals are of a faint and pale but very pleasing Tinct; and the Nectarium is of a deep gold yellow: this is finely

N^o 28.

diversify'd by the Light and Shade thrown in by the various Foldings; and it resembles, when the Flower is well nourish'd, a Vase of beaten Gold.

'Tis hence it has obtain'd in *Holland* the Name of the *Golden Cup*; and they, with Reason, prefer it to many of the gaudy and most double Kinds.

From the Inside of the Nectarium, in its tubular Part, arises six Filaments, not very long, but crown'd with large Buttons. The Style which appears among these exceeds them in Length, and is single, but terminated by a Top or Stigma, divided into three Parts.

The Class of the *Narcissus* is obviously found in these Characters, and the Division under which it is plac'd. It is one of the *Hexandria Monogynia*.

Culture of this NARCISSES.

The Plant in its wild State is native of almost every Part of *Europe*: it will therefore bear, without Danger, the worst Cold of our Winters in the open Borders of a Garden; but as some Care must have been taken to raise the Flower so much above itself, the same Attention must be allowed, wherever it is propagated to continue it in that Lustre.

This is the Case of all these enrich'd Varieties: if left unregarded, they, by Degrees, shrink back into their original Plainness: we mention'd this under an Article wherein it is most plainly conspicuous, the Degeneration of the *Proliferous Daisy*; which, if left but a few Years unregarded in the Ground, tho' at first ever so well adapted to its Nature, loses its irregular Offspring first, and then its Size and doubled Rows of Petals; till, after four or five Seasons, the same Root bears a common py'd Field Daisy.

'Tis the same here. The Foldings, Curls, and Colour of the Nectarium will be lost, unless Care be taken of the Roots; and the Plant, shewing most plainly its Original, will sink into the common wild bastard Daffodil.

Our Gardener is, by this Time, so well instructed in his Principles, that few Words will inform him under this Particular.

4 P

To

March. To preserve the Plant in its Beauty, the Bed must be renew'd once in two Years; and to improve its Lustre, (for so far we would have him carry his Art) it must be rais'd from Seed.

The Compost we recommended for the *Narcissus*, describ'd in a late Number, will perfectly suit this; and it may be propagated from Off-sets, or rais'd from Seed.

The best Method is to purchase *Dutch* Roots, rais'd from the true Kind by Off-sets in their Gardens; and from the best Produce of these to collect Seeds for a fresh Progeny. Thus the first Shew will be equal to any others; and the succeeding Plants will probably exceed them.

The first Year let them flower; and cut down the Stalks before they form the Seeds. Then when the Leaves are wither'd, take them up, dig out the Mould, and fill the Place with new Compost: plant in the Roots again, and cover them up carefully with Mould. Let their Distance be fourteen Inches; and keep the Surface clear from Weeds. The succeeding Spring these Roots will flower much stronger than the first, and they must then be examined critically.

The finest Flowers must be mark'd for Seed,

by setting up a Stick near them. The finest are those which have, 1. The strongest Stalk; 2. The largest Flower; and, 3. The Nectarium most folded, curl'd and wav'd, and of the highest gold Colour.

The Seeds must be sav'd from these with Care, and in the Beginning of September sown in Boxes of the same Compost us'd for the Roots. Till ~~October~~ they must have the Morning Sun only: from that Time to March they must be set open to the Noon Sun; and during Summer they must be plac'd so as to have only the Morning Sun again. The Earth when too dry, must be gently water'd; and Moss and Weeds clear'd off with Care.

At two Years standing the Roots must be taken out of this Mould, by sifting it, and planted at four Inches Distance in a Bed of the same Compost.

Thus will they be brought to flowering, and there will then be found a great Variety among them: many will be inferior to those from which the Seeds were sav'd; many much finer.

The ordinary Kinds must be planted out in different Parts of the Garden; and the finest, in a Bed by themselves, every Year remov'd.

4. DOUBLE JONQUILL.

Pl. 28. The Botanist will know we are not here out of the *Narcissus* Kind. The *Jonquille* obtain'd its Name from the rushy Figure of its Leaves; and is properly call'd more at large the *Jonquille Narcissus*.

So the Plant we call the *Tuberoſe*, was originally, tho' not properly, refer'd to the *Hyacinth* Kind, and call'd the *Tuberoſe Hyacinth*; tho' the Generical Name was afterwards sunk in the same Manner as in the *Jonquille*, and the Plant call'd *Tuberoſe*.

The proper *English* Name of the *Jonquille*, is the Rush-leav'd *Narcissus*. We represent it here in a State of consummate Beauty; with the Flower larger than in the common Growth, and full with multiply'd Petals.

The Colour, in itself elegant in a very high Degree, here has the Advantage of Light and Shade with great Variety; and, upon the Whole, few of the *Narcissus* Kind excel it.

In the single State Authors have call'd it *Narcissus juncifolius luteus*, with a Distinction from the Size *major* and *minor*, as if that constituted different Species. In this double State they name it *Narcissus juncifolius flore multiplici*.

LINNÆUS, expressing the whole Distinction of the Plant in its specific Name, calls it *Narcissus spatha multiflora Nectario campanulato brevi foliis subulatis*: Subulate-leav'd *Narcissus*, with many Flowers from the Scabbard, and the Nectarium short and Bell-shap'd.

This Form of the single Flower we shall shew

in a succeeding Plate, treating of another Kind.

The Leaves are distinct in this as in the other Appearance, small and equal at the Bottom, but diminishing to the Point. This is the Sense of the Term *subulatis*.

The Root is roundish, large, and compos'd of many Coats. The outer Skin of a dusky brown, and the inner ones white. From the Bottom there run many Fibres.

The Leaves are few, rarely more than three or four, often but two, from a Root; and they are long, and of a fine green: they are not flat, as in the common *Narcissus*, but rounded on the Back, and rushy; brownish toward the Bottom; but for the rest of a fine bright green, and hollow'd along the inner Side.

The Stalk is round, not very strong, a Foot high, and of a pale green, except at the Base, where it is often whitish. This rises terminated by a slight Scabbard, containing the Rudiments of the Flowers. When they are perfected for blowing, this thin Film bursts on one Side, and three or four of them appear spreading themselves into a kind of elegant Nosegay.

They are, in this improv'd and double State, very large, full of Petals, and those dispos'd in so many Series, that it was not amiss in LOBEL to describe the Plant by the Term *flore rotundæ circinitatis roseo*; but he err'd, in supposing with the rest, that it differ'd as a Species.

The Flower is throughout yellow, but not without some Variety of Tinge: the Backs of the Petals are more dusky, the Insides paler,

March. ler, and the middle Petals are palest. The Light and Shade from their accumulated Numbers, gives a great deal more apparent Variety; but thus much is in Nature.

The internal Structure of the simple Flower is the same with that of the *Narcissus* last describ'd, except that the Nectarium is shorter. We refer to that Account, instead of repeating the Number and Form of the Filaments, and other Parts here; and have chosen for this Reason also, the double Flower for the Figure.

The Plant is of the same Genus with the preceding; therefore certainly of the same Class, the *Hexandria Monogynia*, the Sixth in the LINNÆAN Method, and its first Section.

Culture of the DOUBLE JONQUILLE.

The single *Jonquille*, from which Art and Industry have rais'd this specious Flower, is a Native of the warmer Parts of *Europe*: it is frequent in the Meadows of *Spain*, and at the Mountains Feet in *Portugal*; and loves a light rich Soil.

From this our rational Gardener will know that he is to seek no Means of Winter's Shelter, but that it will live in a well chosen Spot of open Ground; and that its proper Soil will be one of

the light Composts. That we have directed for March. the *Narcissus*, with a small Mixture more of Sand, and some Earth from under a Wood-Pile, will perfectly answer the Purpose.

Let the Gardener chuse a warm and shelter'd Part of the Garden; and taking out the Earth of the Border a full Spade deep, fill up with the Compost.

Let him draw Lines at a Foot Distance one Way, and nine Inches another; and in the Centre of each long Square made thus, let him plant an Off-set from some good Root.

Let him cover these with two Inches of the same Mould; and after this they will require no more Care than to be kept clear from Weeds; to be shelter'd in the Ground in severe Winters, by some Pea-straw thrown into the Bed; and every other Year to be taken up, and have the Earth taken out as at their first Planting; and its Place supply'd with a fresh Parcel of the same Kind. Thus they will continue to flower strong and finely, and will encrease themselves by Off-sets.

This is all the common Care, and this preserves them. Those who would improve them, must raise the Plants from Seed. The Method we have laid down for the preceding Kind, suits this without Alteration.

5. DOUBLE PRIMROSE.

Pl. 28. The *Italian* Fields supply'd us with the Original of the last double Flower, but the Source Fig. 5. of this we draw from Home.

The common Primrose of our Thickets, rais'd by the Gardener's Hand, and improv'd by repeated Culture, affords the elegant and conspicuous Flower we have represented in the annexed Figure: and which in Nature never fails to attract the Eye, and command a fix'd Attention.

Most of the old Writers have describ'd it; for in this double State it has sometimes, from favouring Circumstances, and a Luxuriance in Nature, been found in the Fields; and it was early known in Gardens: they call it *Primula veris flore duplici*, *flore multiplici*; and *flore pleno*. In its plain and single State they call it *Primula veris minor*; and *Verbasculum majus singulari flore*.

LINNÆUS, who considers this Plant, the Cowslip, and the Oxlip, as Varieties of one Stock, not three distinct Species, calls it *Primula foliis dentatis rugosis*: Dentated and rough-leav'd *Primula*.

The Variations from the Primrose Stock in Gardens are indeed nearly endless, witness the *Polyanthous* Kinds, of which we have spoken in our fourteenth Number; but whether the Cowslip be from the same Stock, demands more Observation.

The Double Primrose is in all its Parts, except the Flower; smaller than the single.

The Root consists of a small Head, from whence run numerous long thick whitish Fibres.

The Leaves rise in a Cluster, and they have no Footstalks: they are oblong, considerably broad, obtuse at the Ends, and dented irregularly about the Edges.

Their Colour is a pale but elegant green; and they are uneven on the Surface, rough, furrow'd as it were, and mark'd with sinking Fibres. They are smooth on the upper Side, but a little hoary on the underneath; and there the Ribs and Veins, which sink in on the upper Side, are prominent, pale, and more hoary than the rest.

The Flower-stalks rise among the Leaves, numerous, pale, and delicate; of various Heights, from two Inches to five or six, and inclin'd in different Directions; so that when a Root is well establish'd in the Ground, and in full Flower, the whole Tuft is very elegant. The Footstalks support each one Flower; they are whitish, somewhat hoary, and have no Rudiments of Leaves upon them.

The Flower itself is large, and of an elegant white, compos'd of numerous Series of Petals, oblong, obtuse, rumpled and wav'd, and thrown together in a pleasing Irregularity.

The Characters from which the Class should be learn'd, are in a great Measure obliterated by this Multiplicity of Petals: they are to be sought in the single Flower; and we have already given them under the Article *Polyanthous*.

The double Flower, as the single, has its long hollow Cup, mark'd with five Ridges, and divided

March. vided at the End into as many Segments. The Filaments are five in the single Flower, and the Style is single, whence the Plant is refer'd to the *Pentandria Monogynia*: the Seeds are numerous, and are contain'd in an oblong plain Capsule, which the Cup defends, till it bursts to scatter them.

Culture of the DOUBLE PRIMROSE.

The common Gardener needs no other Instructions on this Head than to part the Roots at Autumn, and plant them in fresh Pasture-Ground, enrich'd by the Addition of a little Wood-Pile Earth and Cow-dung. Here they will keep their

Beauty; and demand from him very little Care. March.

It will be proper to take the Roots up once in three Years; and either to plant them in new Places, or to take up the Mould, and put in fresh. At these Times the Roots may also be parted, and will thrive well. The first Week in September is the best Time for this Work.

To encrease the Variety, and obtain the Credit of more perfect Gardening, they must be rais'd from Seeds. This we shall have Occasion to name in a succeeding Number; but, in general, the Method is already deliver'd under the Article *Polyanthous Primrose*.

6. GREAT ORANGE DAFFODIL.

Pl. 28. A short Description will serve for this conspicuous
Fig. 6. Flower; for with all its Pride of Size and Singularity, it is no more than a Variety rais'd by artful Culture from the same Stock with the *Goldcup'd Narcissus* nam'd before.

Authors, whom the Singularity of its Appearance has induced to rank it as a distinct Species, have call'd it *Narcissus flore maximo flavo*. It would be better express'd by the pointed Form of the Petals, and lacerated Edge of the Nectarium; if a Variety deserv'd a distinct Appellation.

The Student knows this is not the Course of Science; and we have told him that he is to refer it to the *Narcissus foliis ensiformibus florum nectario longitudine petalorum*: Sword-leav'd *Narcissus*, with the Nectarium equal to the Petals. In this Variety indeed luxuriant Culture brings it considerably to exceed that Length.

The Root is a large Bulb; and from its Base sends many long thick Fibres.

The Leaves are long, narrow, flat, and of a pale greyish green, pointed and edged.

The Stalk is a Foot high, and supports a single Flower. This bursts from an obtuse filmy Scab-

bard, and is very large and extremely conspicuous. It consists, as in the other Daffodils, of six Petals, surrounding a vast Nectarium.

The Colour is throughout a strong yellow; and, when the Flower is perfect, there is in it a Tinge of Orange. The Nectarium is deeper than the Petals in Colour; and in its variously torn and ragged Edge, has the full Lustre of this singular Colour.

The internal Parts, and the succeeding Seed-vessel, we have describ'd already, for they are the same as in the before-mentioned Species: nor is its Culture in any thing different, except that it requires a mellow'd Soil, enrich'd with rotted Dung; and about the Time of its Flowering wants more Water.

It is one of the *Hexandria Monogynia* of LINNÆUS, and may be encreas'd from Off-sets with great Ease. For those of more Curiosity, it ripens Seeds freely and perfectly; and they may be sown as we have directed for those of the *Goldcup'd Narcissus*, whence there will be a Variety of new Flowers, the proper Pride of the ingenious Gardener.

CHAP. II.

The Management of the Flower-Garden, Greenhouse, and Stove.

IF there be Vacancies in any Part of the Borders, from Casualties or Neglect, there are some of the perennial fibrous rooted Plants which may very properly be this Week planted to supply them.

The *Buphtalmums* and several of the *Golden Rods* are of this Number; and *Pinks*, *Carnations*, and *Sweet Williams*, may be added where requir'd. But let all these be taken up with large

Balls of Earth, and planted immediately, in Holes well open'd, and the Mould carefully broken.

Provide also this Week for those hardy Annuals which are to be rais'd from Seed on the Spots where they are to remain. For this Purpose, dig well some small Pieces in different Borders, and levelling the Surface, sow upon one the small blue *Convolvulus*, on others *Dwarf Poppy*, *Nasturtium*, and *Oriental Mallow*.

Let

March. Let the Seeds be scattered carefully thin and regular, and let a Quarter of an Inch of Mould be sifted over them. Careless or ignorant Gardeners rake them in; but this defeats the Purpose of that careful Sowing we directed. The Seeds are thus drawn together in Lumps in some Places, and there are Vacancies in others. It is not fit by any Means; for the Merit of this Sowing is, that the Plants may flower where they rise, without Removal.

This Care taken for a Supply of the common Kinds, let the Gardener look to his Beds of valuable Flowers; they will now be in a Condition to demand his best Attention, promising soon to reward the Labour.

The early Tulips will be in considerable Forwardness; and the Buds will appear even on the later.

Let the Beds be arch'd with tall Hoops, and every Night covered with Canvas. According to the Weather, let this be taken off, earlier or later, in the Morning: but let it always be remov'd, as soon as it can with Safety, to the Plants; for free Air gives them Brightness of Colouring.

Let not the least Bud of a Weed be seen among them: if the Mould be dry, two Hours after Sun-rise give them a gentle Watering; and manage the Covering and Exposure in a moderate Way, neither to choke nor starve them.

This is the Time for removing the Boxes of young Auricula Plants from their Winter Situation. They must now have little Sun.

Let no Moss or Weed appear upon the Mould; and if it grow dry, refresh the Whole with a little Water. This must be given from a Pot with a very fine Nose, and in good Order: and it must be held but a small Height above the Surface. Heavy Watering will wash away the Mould from the more superficial Roots; and a Crack in the Head of the Pot may throw half of them out of the Ground.

The tender Annuals, sown according to our Directions upon Hot-Beds, will soon be fit for

Transplanting. The second Hot-Bed now should be made ready for them: they must be constructed just as the first, only the Mould which covers it must be very rich, and laid one Inch deeper than on the other. These prepar'd this Week will be ready the next, for the Reception of the Plants.

Now let him regulate the Management of the Greenhouse, according to the Weather: the Plants require Air after their long Confinement from it; but they are made tender beyond their Nature, by that Closeness; therefore the utmost Care must be taken in admitting it to them.

The Middle of mild Days must always be watch'd for this Purpose, and the Glasses must be open'd a little: the very least, when it can safely be done, will be serviceable; and by Degrees they will bear more.

Prepare for a Supply, by this Week sowing. The Seeds of several of the Nightshades which do not require the Stove, particularly of that Kind call'd *Annotinum Plinii*, may be now sown.

They should be first clean'd, and harden'd on a Shelf, and then sown in Pots of a light Compost. These should be set half up their Height in a moderate Hot-Bed, and water'd once in three Days, the Plants will rise freely; and when they are two Inches high, they should be planted into separate small Pots, and as they encrease in Height into larger.

Let the Temperature of the Air in the Stove be examined: and as the severe Cold decreases, let the Fires be less.

Stir up the Bark-Beds where they lie uneven, or have lost their natural Warmth: and when this general Care is taken, let there be Attention paid severally to the Plants. They will require cleaning and watering.

Let no Filth remain upon any Part; nor any dead Leaves or decaying Branches: and let the Earth be stir'd upon the Surface of the Pots, and some fresh Mould added, where required, from the proper Composts.



S E C T. II.

The Business of the SEMINARY, for this Week.

THIS Week it will be proper to sow several of the *American* Trees which bear the open Air in our Climate: The *Virginian* Walnuts, the *Acacias* from the same Quarter, the *Liquid Amber* Tree, and the *Planes*.

The particular Management of each of these we shall deliver under their proper Heads, treating of them when in their greatest Perfection. The general Method now is the same; the Earth must be broke very fine, and the Seeds or Fruits plac'd

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with a careful Hand at regular Distances.

Afterwards, if the Mould grow very dry, it must be refresh'd with Water. The Beds must be kept clear from Weeds; and when the young Trees are of a Bigness for transplanting, they must be remov'd with Caution.

Let the next Care be of those Trees which are planted out from their Seed-Beds in Rows, and have stood some Time to root.

The great Article for encouraging these to shoot,

4 Q

March. shoot, is digging up the Earth between the Rows. No Time is so serviceable as this, because they are preparing for the Spring Growth; and if this be done carefully, there will be a fine new-broken Soil thrown all about the Fibres for them to shoot freely; and obtain abundant Nourishment.

This done, let the careful Gardener look over those Trees and Shrubs he is training for conspicuous Parts of the Garden, and for other Purposes, where they will be in Sight.

Let him trim up those he intends for Heads; and tie carefully the young Shoots of such as he would have rise strait to Stakes. Nature is very obedient to the Hand at this Time; and whatever Form is given her, she will retain: but if the Shoot be suffered to run crooked now, no Art will reduce it afterwards.

This is the best Season for sowing many of the biennial and perennial Plants; which should stand in the Seminary till the Autumn before their flowering. The general Practice for these is to be the same: the Particulars we shall deliver under the several Species.

The Ground for the Reception of the Seeds must be well dug, and all Roots of perennial

Weeds carefully picked out: none so carefully March. as Couch-grass; for if that be suffered to remain in the Ground now, it will be impossible to pull it up afterwards, without tearing up the young Plants; or, to leave it in without starving them.

When the Ground is clear'd from Roots, let the Surface be laid level; and the Seeds, according to their Kinds, scatter'd on it at various Distances, fewer being allow'd to the Quantity as the Plants are larger.

About a Quarter of an Inch of Mould must be sifted over them; and after that a few Bushes thrown on, to keep off Damage from Accidents. These are to be taken off about the Time the Plants are to appear.

After this, they must be weeded and water'd as Occasion require; and when they have some Strength they must be planted out into other Beds, there to remain till they are remov'd into the Border.

This Week the Gardener should sow Wall Flowers; *French Honeysuckle*, *Columbines*, and *Rose Campions*, purple *Amaranths*, and *Veronicas*.



S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

SOME Care must yet be taken of the Trees planted the preceding *October*. We have directed in what Manner their Heads should be cut down; and the next Business is to prevent the Earth from drying about their Roots. Various Methods have been propos'd for this; but nothing is so well as a Defence of Turf.

Let a Quantity of this be cut from a Common of the usual Thickness; and let it be carefully laid about the Root of the Tree, and to two Foot Distance all round it.

This will answer more than one Purpose. The Weight of the Turf will keep the Mould firm and steady to the Roots, as well as preserve it in a State of Moisture: and Waterings given upon this will gently make their Way thro', to the perfect Refreshment of the Trees; the Sun's Power will be kept off from over drying the Mould; and every thing will promote Nature's Course in forming the Shoots.

Let the Gardener look round his young Fruit-Trees; and if there be any other, which though of somewhat longer standing, want the same Assistance, let them have it.

If he find any over headed for the Root, which will be now discover'd plainly, they must be cut a little closer. Let the Surface be stir'd

about them, and let them have the same Refreshment of Turf laid with the Grass Side downwards at their Roots, and Waterings at Intervals.

This Week let the Gardener plant Vines where they are wanted. This is an Article as little understood as any in his Profession, and consequently as ill practis'd: its Importance requires that we deliver it in a better Manner.

The first Consideration is the Soil, which requires to be dry and poor. Vines that have grown in *England* from old Walls; and in the warmer Parts of *Europe*, out of the Cracks of Rocks, have borne better Grapes than any other.

In *France*, where their Soil is naturally poor enough for other Things, they throw in Rubbish for the Plantation of Vines; and, in general, the same Practice is follow'd successfully in *England*: but there is one Thing greatly preferable, which I have seen done only in a few Places, and there kept a profound Secret: this is, the mixing among the Soil Chips of Stone.

Even *Italy* cannot do this; for their Stone is Marble; hard, and cold. *England* has a vast Resource for the Improvement of the Vine; and it is fit all know it.

Instead

March. Instead of Brick and Lime Rubish, let Refuse of Stone be used: this, in many Counties lies at the Surface; and elsewhere the Chipings from a Mason's Yard will do; only let the Kind be well chosen; the softest and roughest Stone is best, *Ryegate* Stone better than any other; it warms, as well as abates the Richness of the Ground; and imbibes the refreshing Juices of the Air.

The Grapes ripen from such a Soil in Seasons when there are no others; and they are always better flavoured.

Examining how this happened in a neighbouring County, I learned from turning up the Soil, what the Gardener would not disclose; and have since advised the Use of Stone successfully.

The Chips should be flat, or not too thick, such as naturally fly off, in the first working the Stone; and they should afterwards be beat to Pieces with a Mallet. The most useful Size is the bigness of a Crown-piece.

Therefore when a Plantation is intended, trench the Ground; bury in it some of this Stone Rubish; and mix more among the upper Part: add a little Soot and Coal-Ashes; and a good deal of fresh Mould from a hilly barren Pasture, that has not been plowed in Man's Memory.

This Soil will have Strength without Luxuriance; and it will keep in Order a great while.

Let the Border be dug and prepared in this Manner to the Breadth of five Feet, and all the Roots of perennial Weeds taken out.

This prepared, let the Vines be brought in. The old Method was to plant Layers: of later Time, Cuttings mentioned by some, but lightly, has been introduced: but the Use of Layers is after all the best.

Those who object to Layers, say the Roots decay in the Removal. 'Tis certain they are slight, not firm, as in other Shrubs; but they only decay, because ill managed: they may be preserved alive, and they will help the Plant.

The Method is this. Mark upon the Border how far the woody Part will extend itself, when placed at about seven Inches from the Wall, this is to be the Rule for Planting; and the Method is not to be by a Hole, as in other Cases, but by a double shelving Trench.

Let the Earth lie entire along this Mark, and on each Side dig away the Mould one Spade

deep, in a slanting Manner outwards.

This done, there will be a Trench, with a Ridge in the Middle of it. In this Manner let the Opening be made for the Reception of all the Sets; and then let them be taken up, if in the same Ground; or unpacked, if brought from a distant Place.

In either Case they must be planted with Speed, as well as Care, for the Air has great Effect upon their tender Roots; and nothing but Expedition in the Work can preserve them when they are uncovered.

A great deal of Caution is required in the Packing of these; but it is no more than what we have directed on a former Occasion, treating of common Fruit-Trees.

Let a Quantity of wet Moss be in Readiness when they are taken up; and let them be immediately laid upon a Bed of this, with more of it upon them.

In this Manner let them be brought to the Place, and when they are unpacked, let them be planted with careful Speed.

The Root consists of a strong Part; and Fibres issuing from it. This strong Part will be alive; but in Spite of the best Care, many of the Fibres will be decayed.

These would hurt the living Ones, if the Vines were planted in the Manner of other Trees, and it would be in vain to direct the Gardener to cut the dead Ones out, for there is no knowing which are dead; and which not: it is therefore we have directed the Manner of Ridge-planting.

The Trenches are now opened we will suppose, the Plants ready, and three People should be employed in the Work, one to place the Plants, another to cover in the Mould, and a third to take Care of the Remainder: otherwise more will be lost than saved.

When the first is taken out, the strong Root must be cut off at each End to refresh it for growing; it must then be laid along upon the Back of the Ridge; and the Fibres growing from it, must be spread on each Side down the two sloping Parts; then the Mould must be carefully put in; and the Plant will thus grow much better than from a bare Cutting. Some of the Fibres will decay, but others will live, and the main Part will send out more.

March.

March.

March.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

THE Asparagus will now be preparing to shoot, and the Beds must be rendered fit for giving its large Buds Room. This must be done with a three pronged Fork, flat, and with short Tynes: It is best to have one purposely made for this Service, for the Benefit it does is very essential; and yet without due Care, it may do more harm, than it can good, by hurting the Crown of the Roots.

The proper Management of the Forking at this Time, loosens the Mould, destroys Weeds, and attracts all the Influences of the Air, Dews, and Showers; these swell the Buds, and the fresh broken Mould gives them free Passage: they grow more quick, and they are tenderer and better flavoured for it.

This done, let a rich, warm Piece be dug and levelled, and sow a Crop of Endive. It will come in a very acceptable Season.

We have in the preceding Numbers directed two Sowings of *Dutch Parsley*. The Plants of the first will be now come up, and it will be proper when they have a few Leaves, to thin them.

The Gardeners always (so far as I have seen) leave them too close: let them stand eight Inches asunder, and let the Ground be now and then well broke with a small strong Hoe between them.

The Crops of Radishes will appear now fresh and vigorous, from the Sowings we lately directed: they require the same Management with this Parsley to bring them to Perfection, but not so great a Distance, they should be thin'd by Hand, pulling up the poor Plants; and leaving the rest at four Inches Distance.

This pulling up a Part, will leave the Ground light and loose about the rest for the present, and will that Way be of great Service; a few Days after they must be hoed in the Manner we just now directed for the Parsley.

The Trouble is not so much, and they will thus come early; and be tender and well tasted. A dry Morning, after a light Frost, is the best Time for this, the Mould being then crumbly and free,

it will fall loose about the Heads of the Plants, and being broke at the Surface, the Dews will be received, and it will keep moist and loose.

The Gardener will remember what we have directed him, respecting Hot-Beds for Cucumbers and Melons: he knows how he is to manage the Plants of his first Sowing, and now it will be proper to prepare for a second Crop.

The Hot-beds must be made in the same Manner, and the whole Management of the young Plants must be the same.

Some *French Beans* should be planted this Week, but it must be done with great Care and Circumspection.

If the Ground be wet, the Seed will rot instead of shooting; and if the Place be exposed, cold Winds will destroy the Plants as soon as they appear.

From this they must be defended, and also from Slugs, for their first Leaves are very juicy, and these Devourers are fond of them.

This regards their Management, when up; and we shall speak of it hereafter. The present Care must be in the Choice of a Spot; this should be in a sheltered and warm Place, and where the Ground is higher than the Generality, that Wet may not settle upon it.

If the Weather be very rainy, the Sowing shou'd be defer'd; but supposing this good, and the Piece thus chosen, there will be a Prospect of a very valuable Crop.

The *Battersea Bean*, or lesser *French Bean* is the best Kind for sowing now. Let Drills be opened along the Bed at sixteen Inches Distance, and to the Depth of one Inch, or thereabout; and into these drop the Beans at about three Inches asunder, draw the Mould over them, and in nine Days, with good Weather, the Plants will appear. As they rise in Height, the Mould must be drawn up to them with a Hoe. They must be carefully watched, to defend them from Slugs; and the Ground between them must be hoed once in ten Days.

EDEN:

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XXIX.

For the latter End of *MARCH*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and curious Plants now in their Perfection.

I. VIOLET SELFHEAL.

March. **T**HIS Plant, tho' of consummate Elegance, has so much the Aspect of a common Weed by our Pathways, that till the Flowers disclose themselves, it seems no other than that wild Plant whose Seeds have by Chance been blown into a Garden. It is indeed no more than a Variety of the Weed it so much resembles; but no Accident of Growth renders it such in *English Pastures*.

We receive the Seeds from the warmer Parts of *Europe*, where it bursts in all this Glow of Beauty, from the Cracks of Rocks on the Sides of Mountains.

In our Gardens these Seeds produce the same noble Variety; but if the Culture be neglected, the same Root will, after a few Years, produce the common *Selfheal*, such as we tread upon in every Foot-Path.

This is the Case we mention'd in Regard to the *Proliferous Daisy*; and thus it is with all Varieties: this justifies LINNÆUS, who, tho' the Plant stands distinguish'd as a Species in C. BAUHINE, under the Name *Prunella cærulea magno flore*; and in most other Authors with like Appellations, has reduc'd it to a Variety only, and refer'd it to the common *Selfheal*. This he calls *Prunella foliis ovato oblongis petiolatis: Prunella*, with oblong oval Leaves on Footstalks.

Numb. XXIX.

The Root is oblong, irregular, brown, and hung about with many slender and very long whitish March: Fibres.

The first Leaves are numerous, and they have long slender Footstalks. They are oblong and indented; considerably broad at the Base, and smaller to the Point.

The Stalk is ten Inches high, purplish at the Bottom, toward the Top of a pale green, and covered with a light velvety Down.

On each Side of the Stalk there runs a slight Furrow; and at Distances there are about two Knots; the Stalk at these also is ting'd with purplish; and there rise from each of the Knots two Leaves: these have slender Footstalks, shorter than those from the Root, but they resemble them in Form. They are broadest at the Base, smaller to the Point, and irregularly dented along the Edges.

Their Colour is a deep strong green; and they are smooth on the upper Side, and hairy underneath.

The Flowers are large and very beautiful: they terminate the Stalk in a thick short Spike, and they are large and gaping. Their Colour a deep and elegant violet blue. They charm the Eye, but they have no Smell.

4 R

Their

March. Their Structure demands the Student's Attention. Each is plac'd in a short Cup, divided into two Lips. The upper Lip is flat, and nip'd lightly in three Parts at the Top. The lower is narrower, and lightly split in two. One Petal forms the Body of the Flower, which is lobulate and wide open. The tubular Part at the Base is short: the upper Lip is large, broad, and stands drooping: the under Lip is smaller, and turn'd down; it is cut into three Segments, of which the middle one, which is broadest, is dented in the Midst, and serrated.

Within the Body of the Flower are four Filaments, two of these are shorter than the others: the longer Pair are in a Manner split at the Top; and this Part runs in one Branch above the Button, which is inserted over the other. With these rises a single Style from a four-parted Rudiment, which ripening afterwards, forms four distinct Seeds, lodg'd in the Cup, without a Capsule.

The Botanical Student hence learns the Class and Section of the Plant. The *Didynamia*, in the LINNÆAN Method, comprehend all those Plants in whose Flower two Filaments are regularly longer than the others; and the Subdivision is into *Gymnospermia*, those which have the Seeds naked in the Cup; and *Angiospermia*, such as have them in a Capsule. This Plant is one of the *Gymnospermia*.

Culture of the VIOLET SELFHEAL.

We have told in what Places this elegant Plant thrives wild, and this the careful Gardener should make the Rule of his Conduct.

The Plant is to be rais'd from Seeds, and they should be obtain'd from *Spain*, or some other warm *European* Climate.

Let the Gardener fix upon a Piece of a Border

open to the South Sun, and defended by a Wall. March.

Let him mix some Sand, the coarsest he can get, with fresh Pasture-Earth and old Cow-dung. A Bushel of the Earth, and a Peck of each of the others, will be a good Proportion.

Let him dig away the Mould close under the Wall, and with the Point of a Trowel pick out some of the Mortar from between the Bricks, filling up the Place with this Compost: then adding more, till it be rais'd to the Level of the Bed.

Upon this Ground, and principally close to the Wall, let him in the Beginning of *August* scatter the Seeds pretty thick. Let him sift over them a Straw's Breadth of common Mould; this will keep the Seeds moist till they shoot, and will give the Part the Colour of the rest.

In *September* the young Plants will appear, and they must be weeded and left to Nature. The Winter will kill some, and in Spring the weaker of those which remain must be pull'd up, the strongest being left at a Foot Distance.

Some will have rooted by this Time into the Wall, and they will be the most healthy.

These will naturally flower the first Spring; and the next Year all.

After this no more Care need be taken of the Plant.

Those Roots which have run into the Wall will live many Years; and the scatter'd Seeds will raise others in Places where Nature will preserve them.

If they are not permitted to Seed, the Stalks being cut off as the Flowers fade, more will be produc'd in their Place, throughout a great Part of the Year; and their thick Tufts hanging about Bottoms of the Walls, where nothing else will grow; and where they will look too rich for Weeds, tho' unlike all other Flowers, will give a very pleasing Variety.

2. BLUE PYRENÆAN ASTER.

Pl. 29.
Fig. 2.

This is a Plant familiar in the *French* Gardens, and wild upon the bleak Sides of the *Pyrenean* Mountains; valuable for its erect and firm Aspect, the Number and the Lustre of its Flowers, and for their early Appearance. We are accustomed to the *Asters* in great Variety in Autumn; but the earlier Kinds have always an Air of Singularity.

ROBINUS brought this Species from its native Mountains into the Gardens of his Country: and DODART nam'd it there *Aster Pyrenæus præcox flore cæruleo majore*: Early *Pyrenean Aster*, with large blue Flowers.

MORISON has describ'd it also under the Name *Aster præcox flore cæruleo majori*. The earlier Writers did not know it.

The Root is long, whitish, spreading, and furnished with a Multitude of Fibres.

The Stalk is firm, upright, robust, and two Foot high: single all the Way up; well covered

with Leaves; and at the Summit spread out into a Number of Branches, all crowned with numerous Flowers.

The whole Plant is covered with a thick firm hairy Substance. The Stalk is ridg'd, and of a brownish green.

The Leaves are also of a brown green, and they are plac'd alternately. They have no Footstalk. They are oblong and dented at the Edges, very hairy, and rough to the Touch.

The Flowers terminate all the Branchings from the Top of the Stalk, and there rise many also on Side Shoots from the Bosoms of the Leaves, so that the whole Cluster is of a round large Expanse, and every Flower of great Beauty. They are of the composite radiated Kind, and the Rays are of a fine bright blue, the Disk gold yellow.

The Rays are about thirty in Number; their under

March. under Part or Back is somewhat paler than the upper, and they spread full out, and turn themselves irregularly, so as to shew the Back in many Places.

We have before told our Student, that in these composite Kinds the small Floscules which compose the Disk, are so many perfect Flowers, as the Rays are so many imperfect ones, all collected into a Head, surrounded by a Cup, and forming one general Flower.

In this the Cup is form'd of many Series of little leafy Scales, plac'd over one another; and the Points of the anterior ones are prominent. The Floscules are numerous in the Disk, hollow'd, widest at the Mouth, and there divided into five Segments.

The female Flowers are long, and are irregularly and uncertainly nick'd in three Places at the Top. These have at their Base the Rudiment of the Seed, covered with Hairs, and from it a single Style, with a split Top. They have no Filaments.

In each of the others, which compose the Disk, there are five Filaments, with convergent Buttons. The Duct from these Buttons is destin'd to impregnate the Rudiments of the Seeds in the Base of the Flowers at the Rim, where there are no male Organs or Filaments; but, beside these, there are also some Rudiments of Seeds under the tubular Floscules in the Disk, which also come to Maturity, tho' not certainly or universally.

We have before acquainted the Student with the Subdivisions of the *Syngenesious* Class: that this Plant belongs to that Tribe he will see by the

Coalescence of the Buttons in the tubular Floscules; and as there are Seeds under those Floscules, as well as in the female ones on the Rim, he will perceive it is one of the *Polygamia Superflua*; the various Impregnation not being necessary.

Culture of this ASTER.

The Plant requires a deep rich Mould; and tho' it will live in almost any Situation, yet the full Beauty of its Flowers, and their early Appearance, depend upon an open Sun. No Hot-Bed is requir'd to raise, or Greenhouse to preserve it: the worst of our Winters will not hurt it in open Ground.

Let the Gardener select a warm and well defended Spot; and dig in among the Mould some fresh Pasture-Earth.

Seeds of the Plant are easily procur'd; and let him sow them in the Beginning of *September*. They will shoot freely, and the young Plants will stand the Winter without Care.

In Spring let them be clear'd from Weeds, and the weakest pull'd up: let the others be left at ten Inches Distance. Now and then let them be water'd, and some of the strongest of them will flower this Season.

The Stalks must be cut down, that the young Roots may not exhaust themselves in ripening Seeds; and the next Season all will flower in great Beauty.

They may be propagated, after this, by parting the Roots of old Plants in Autumn, but Seedlings are always better.

3. EARLY SHRUB ANONIS.

Pl. 29. A very elegant Plant, regular in Growth, rais'd with little Trouble; and valuable for the early Appearance of the Flowers, and for their long Continuance.

Fig. 3.

The old Writers did not know it: but of late Time most have mentioned it. MORISON calls it *Anonis purpurea verna frutescens*. — DODART, *Anonis purpurea frutescens non spinosa* — and LINNÆUS, *Anonis floribus paniculatis, pedunculis subtrifloris, stipulis vaginalibus, foliis ternatis*: Ternate-leav'd *Anonis*, with cluster'd Flowers plac'd usually in Three's, and with Films to the Base of the Leaves, surrounding their Stalks.

The Root is brownish, tender, and furnished with many long and straggling Fibres.

The Stem is round, firm, and two Foot and a half high; branched from the Bottom to the Top, and forming itself naturally into a handsome Shrub.

The Bottom is often purplish: the Branches are of a greyish green; and they are slender, tough, and pliable.

The Leaves are plac'd at Distances, in a wild

and irregular but not unpleasing Manner. They rise three together; but often there will be one or two Tufts of young ones in the Bosom of the older, so that the whole Cluster amounts to six or nine. They are long, narrow, obtuse, and elegantly serrated at the Edges.

Their Colour is a fine fresh green, and their Rib is often purplish: usually there is no Footstalk; but on the lower Part of the Plant in some Places there is a short one, supporting the three Leaves, with a Film at the Base.

The Flowers are extremely elegant; they are large, and are dispos'd in considerable Tufts, terminating all the Branches. Usually three grow upon one Footstalk, and there will be five or six such at the Top of each Branch.

Their Colour is a lively Crimson on the Outside; within they seem painted by a curious Hand, with Lines and Streaks of White; and the very Cup, from whose Hollow they rise, is redish.

The Student, viewing all more closely, will find the Construction very elegant and singular.

The

March. The Cup is hollow, form'd of one Piece, and divided at the Edge into five pointed Segments, which turn upwards.

The Flower is regularly papilionaceous, and is compos'd of four unequal Petals. The Vexillum is large, of an oval heart-like Form, and depress'd at the Sides: the Alæ are oval, and half as long as this: the Carina is pointed, and longer than the Alæ.

In the Body of the Flower are lodg'd ten Filaments; nine of them coalesce for a great Part of their Length, and there is a Tenth naturally loose; but sometimes this will be united also with them; the Ends are free, and are turn'd up, and they have small Buttons.

The Style is single, and terminated by a roundish small Head.

The Seed-vessel is a short hairy Pod, in which are a few Kidney-shap'd Seeds.

The Coalescence of nine among these Filaments, and the one remaining single, shews the Plant to be one of the *Diadelphia Decandria*; the Class and Section of most papilionaceous Plants.

Culture of this ANONIS.

It is a Native of the Southern Parts of France, and of some other European Provinces. With us it requires no peculiar Care or Defence: the open Ground will preserve it; and being once rooted, it will endure many Years, and be every Season stronger, and better furnish'd with Bloom.

It should be rais'd from Seeds, and the Soil should be such as Nature shews it best loves.

In France it flourishes best wild, in high and barren Grounds, where there is Depth of Mould. Its long Fibres spread far, and pierce deep, so

that they find Resources of Nourishment, where the Eye sees only Barrenness. March.

Let the Gardener fix upon a dry warm Spot in his Ground, and take out the Mould Three-spade deep. Let him throw into the Place some dry Pasture Earth, mix'd with a little Soot, and a good Quantity of old Cow-dung.

Let him cover this an Inch with the common Mould of the Border; and upon that Surface scatter some of the Seeds; in the third Week in September.

Let these be covered with a Straw's Breadth of fine Mould sifted over them; and let him throw a few Bushes over the Ground, to keep off Accidents.

When the young Plants appear, free them from Weeds, and give them in a Morning, once in four Days, a gentle Watering.

In Spring thin them to a Foot Distance, taking up the weakest Plants; and after this weed them carefully; break the Earth boldly between them with a Trowel, for they root deep; and every other Day give them a gentle Watering. Take off the lower Side Shoots, to train them with a little Stem; and they will rise to their due Height the first Season, and flower vigorously.

Let none stand this Year for Seed. Take off the Heads as the Flowers fade, and the Plants will by this Means continue flowering three or four Months. Gardeners think this exhausts the Roots, but they err: 'tis ripening of Seeds that weakens this Kind of Plants, not the most profuse flowering.

The Plant thus established in the Ground will require no more Care: but it will every Year be more beautiful.

4. SPIKED DRACOCEPHALUM.

Pl. 29. This is a very singular and very beautiful Fig. 4. Plant, Native of America, and thence unknown to the earlier Writers; but by the later, in general, celebrated highly, tho' under various Names. BARRELIERE has call'd it a *Lyfimachia*; DODART a *Digitalis*. BOCCONE, who saw its Resemblance to the *Digitalis*, but saw with it an essential Difference also, nam'd it *Pseudo-Digitalis*.

LINNÆUS, banishing with Reason all these bastard Names, adopts for the Genus the Name given it by BREYNIUS and MORISON, *Dracocephalum*, Dragon's-head; and adds, as the Distinction of this Species, *floribus spicatis, foliis lanceolatis serratis*: Spiked *Dracocephalum*, with lanceolated and serrated Leaves.

The Student will remember that we have describ'd already one of these *Dracocephala*, the Plant call'd *Cedronella*; and by the vulgar Gardener, *Balm of Gilead*. The tufted Flowers of that Plant, shew the Occasion of receiving the spiked Form of these into the distinctive Name.

The Root is compos'd of numerous long thick white Fibres, connected to a little Head.

The Stalk is upright, undivided, slender, but firm, and more than a Yard high. Its Colour toward the Ground is Crimson, upward a pale Green, but stain'd with some Remains of the Ground Tinct; and it is striated and ridged.

The Leaves rise at the Joints, two from each; these Joints stand distinct, and give the Plant a fine free Air.

The Leaves are of the Length of a Man's Finger, and not more than equal to it in Breadth. They are of a very beautiful green, with the Middle Rib often red; and they are deeply and elegantly serrated along the Edge, and terminate in a long slender Point.

The Flowers are very numerous, they terminate the Stalk in a long Series; with several Side Shoots from the lower Part of this main Spike, all covered with Flowers, large enough to be singly conspicuous and beautiful. They are long, hollow, and



1
Violet Selfheal

2
Blue Pyrenaean Aster

3
Early Shrub Anemone

4
Spiked Dracocephalum

5
Tutsan leaved Apocynum

6
Indian Heliotrope

March. and divided in a singular Manner into two Parts at the Extremity.

The Bottom of the tubular Part, where it rises from the Cup, is of a blueish Red, the Body redder; and within the Mouth are Spots of the highest Crimson, as if laid on with a Pencil.

The Cup in which each Flower is placed, is very short, form'd of a single Piece, and cut at the Rim into five Segments.

The Body of the Flower is form'd of a single Petal; the tubular Part is long, and the Mouth opens very wide.

The upper Lip is broad, arched, and undivided: the lower is cut into three Parts; and of these the two Side Segments are turn'd up, and the lower one is dependent, round, and prominent behind; and has a Nip in the Extremity.

This singular Structure of the Opening in the Flower, might very well refer the Plant to a new Genus, with those who examined Things no farther; but every thing confirms the other Distribution.

The Filaments run up under the upper Lip, and they are four in Number; two are somewhat longer than the others, and they have Heart-shap'd Buttons: the Style single, but it rises from a four-parted Fruit, and is terminated by a fine Top or Stigma, split into two deep Parts, which turn backward.

Four naked Seeds follow, lodg'd in the Bottom of the Cup; and from the View of these, even in their Rudiment, and from the Inequality of the Filaments, our Student will know the Plant is one of the *Didynamia Gymnospermia*. The Class comprehending those Plants which have two Filaments longer than the others; and this Subdivision, *Gymnospermia*, those with naked Seeds.

Culture of this DRACOCEPHALUM.

The Plant is a Native of *North America*, where it thrives in a deep rich Soil, not too remote from Rivers: 'tis found in other Situations, but it flourishes only in these.

With us it will stand some Seasons in the open Ground: but that is hazardous: it deserves a little Care; and to secure it and preserve all its Beauty there does not require much.

Let it be raised from Seeds; and preserved in Pots.

Let a Compost be made like that Soil in which it thrives most, wild: mix two Bushels of rich black Meadow-Earth, one Bushel of Pond-Mud,

a Peck of Cow-dung, and half a Peck of Sand. March.

Throw this up in a Heap, and let it have the Influence of the Weather six or eight Months, with frequent Turnings: the Quantity will be more than needed for this Plant; and it will serve for others from like Soils.

Seeds should be obtain'd from *America*; and early in Spring sown in a Pot of this Compost, set up to the Rim in a moderate Bark-Bed; or in Hot-Bed of Dung that has lost its first Heat: they should be covered a Quarter of an Inch with the same Mould; and when the Plants appear they must have gentle Waterings, and by Degrees a little Air.

When they are two Inches high, let as many as are intended to be rais'd be planted out into separate Pots: watering them carefully, and shading them in the same Hot-Bed with Mats, till they are well rooted in the new Mould.

Then they must be inur'd to the Air; and early in Summer set out in a warm and well shelter'd Place.

The Earth on the Surface of the Pots must be frequently stir'd; a little fresh Compost put on, twice in the Summer; and they must be water'd once in two or three Days.

Some of them will flower the same Year; and of the others, some, with due Care in Winter, will throw out their Stalks for flowering early in the Spring: a singular Time for such a Plant; and these will gain new Value from that Novelty.

In the latter End of *September* let the Stalks of those which have flower'd be cut down; and let a small Quantity of fresh Compost be spread over the Surface of the old, in all the Pots.

Let them be set under a Frame, such as is us'd to cover Hot-Beds; and in mild Weather let some Air be admitted.

In the Beginning of *March* let the old Earth be remov'd as low as it can be taken out without injuring the Roots, and the Place supply'd with fresh Compost.

After this, as the Weather grows warmer, let them be brought to bear the free Air; and in *April* set out for flowering, in a warm shelter'd Place. They must be water'd frequently to promote the free shooting of the Stalk, and to fill the Buds of their numerous Flowers.

After this, once a Year the Roots should be taken up, their extreme Fibres trim'd, and, when they are large enough, parted for encreasing the Plants. They will grow stronger every Year.

March.

March.

5. TUTSAN - LEAVED APOCYNUM.

Pl. 29. A very singular and beautiful Plant; easily
Fig. 5. rais'd in our Gardens, and worthy to be made
universal in them; not only for the Flower, but
for the Leaves and general Manner of Growth.
It is of *American* Origin, therefore unknown to
the earlier Writers; but familiar to all of late
Time.

The Characters of the *Apocynum* are mark'd
too strong upon it, for Mistakes as to the Genus
whereto it belongs; and the great Resemblance
of the Leaves to those of the large *St. John's
Wort*, call'd *Tutsan*, has given its Name as a
Species among most of them.

Boccone, Morison, and the rest, call it
Apocynum Canadense foliis Androsæmi majoris.

Linnaeus, in his first Works, calls it *Apocynum
foliis ovatis*; but the numerous Species added to that
Genus since, have made a longer Name now neces-
sary for its Distinction: he calls it, in his later Wri-
tings, *Apocynum caule erectiusculo herbaceo foliis ova-
tis utrinque glabris cymis terminalibus*: Upright
hairy *Apocynum*, with oval Leaves, smooth on
both Sides, and Flowers in Tufts at the Tops of
the Branches.

The Plant is a Yard high; of regular Growth,
and very handsome Aspect.

The Root is very long, irregularly divided,
brownish, and hung at Distances with Tufts of
slender white Fibres.

The Stalks rise single from each Head of the
Root, and they are upright, firm, smooth, and of a
brownish Colour; red toward the Base, and of a
green and brown variously mix'd upwards.

The Branches are not numerous, but they
grow with great Regularity from the Bosoms of
the upper Leaves. These, as also the tender Part
toward the Top of the principal Stalk, are usu-
ally spotted and stained with irregular Dots of
brown.

The Leaves are placed in Pairs at distant
Joints, and they are supported by short redish
Footstalks. They are broad, short, of a Figure
nearly oval, and of a firm Substance.

Their Colour is a deep strong green, and they
have conspicuous Veins, of which the middle one is
usually stain'd with purple, and the others are
white. The Footstalks of these Leaves are a lit-
tle hollow'd; and the under Part of the whole
Leaf is of a much paler green than the upper,
and downy.

The Flowers are small, but they are singular
in Form and Colouring, and their Number makes
some Amends for their Want of Bigness. They
crown the Top of the main Stalk, and the Extre-
mities of all the Branches, in a kind of circular
Tufts, not close rang'd and compact, but regular
enough, and of no short Continuance.

The Ground Colour of the Flower is white;
but it is stain'd in various Proportions with a
lively Crimson: sometimes this Colour is dis-
pos'd in Streaks and Rays; in some Flowers it

occupies the whole Base, and spreads itself in a
lighter Tinct over the rest of the Body; and in
some there is little of it.

The Form of the Flower has also its Singu-
larity, though, in general, it agrees with the *A-
pocynum* Kinds. It is placed in a minute Cup,
form'd of one Piece, and divided by five Dents
at the Edge.

One Petal makes the Body of the Flower, and
this is hollow, rounded, of a Bell-like Shape,
and at the Edge cut into five small Segments,
which curl backwards.

In its Base the Student will perceive five scaly
Substances, of an oval Form, with five small
Bristles surrounding the small Rudiment of the
Fruit. The Organs of Impregnation rise distinct
from these; and he has seen before the Petal and
the Cup: these are the universal Parts of Flow-
ers. This singular Appendage in the Centre he
will therefore know is a Nectarium: so Linnaeus,
the first who establish'd the Doctrine of these
Glands, has nam'd it.

The Filaments are five, but they are scarce
distinguishable, from their Minuteness: their But-
tons make Amends, and are sufficiently conspi-
cuous: they are oblong, sharp, split at the
Bottom, and at the Points convergent.

The Styles are as inconsiderable as the Fila-
ments; but their Stigmata or Tops mark them
as strongly as the Buttons do the Filaments:
these are two, they crown two oval Rudiments,
and are themselves large and rounded.

Where the Styles are wanting, or where they
are not distinct, we have observed these Stigmata
mark the female Organs, and establish that Part
of the essential Character.

They are conspicuously two in this Flower,
therefore the Plant is of the *Digynia*; and its
five Buttons, counted where the Filaments are less
obvious, shew it one of the fifth LINNÆAN
Class, *Pentandria*.

The Seed-vessels are two after every Flower,
and they are long like Pods, with many small
Seeds, crown'd with a long silky Down.

Culture of this APOCYNUM.

It is a Native of *North America*, where it
thrives best in a deep, rich and light Mould; in
Thickets, at the Sides of Forests, or near lofty
Trees. It does not bear absolute Shade, nor will
grow freely where there is open Sun.

We learn by this to compose an artificial Soil
for it, and adapt a proper Situation.

Let the Gardener mix one Bushel of Meadow-
Earth, rich and black; two Bushels of Pond-
Mud, three Pecks of Wood-Pile Earth, and one
of Hogs Dung. These should be thrown up in a
Heap, and turn'd at Times.

When this is ready, and Seeds are procur'd
from *America*, let a Pot be fill'd with it, and
some

March. some of them scattered over the Surface. Cover them with a Straw's Breadth of the same Compost sifted upon them; and this being done, early in *March* let the shooting of the Seeds be promoted, by setting the Pot up to the Rim in a Bark-Bed.

The Plants, when they have a little Height, should be remov'd into separate small Pots, and shaded in the Hot-Bed, till they have taken Root.

After this they must be hardened to the Air, for they are to have no more of this Nursing: the Seedlings require it, but grown Plants of this *Apocynum* are hardy.

In *May*, let a Border be chosen that is well shelter'd, warm, and somewhat shaded, at least, that has not any Time the full Blaze of a Noon-Day Sun.

Let the Earth be dug out of this for a Space sufficient for the Number of Plants intended to

be preserved, and throw in the Compost ten Inches deep.

Take the Plants carefully out of the Pots, with the whole Ball of Earth, and trim the outside Fibres. Open Holes at a Foot and half Distance, and set in the whole Ball of Earth with its Plant perfectly upright.

Draw some Mould over the Surface of the Ball of Earth from the Pot, and settle it well about the Stem; and then give every Evening a gentle Watering, and the Plantation will succeed. They will grow more and more vigorous every Day.

Their own Earth will afford Nourishment enough to the Roots for the first Days; and after this the Fibres on the Surface will shoot; the Ball will crack and break with the frequent Waterings; and new Shoots will be form'd every Way.

Some of the Plants will flower the first Season; and all the succeeding Summer.

6. INDIAN HELIOTROPE.

Pl. 29. Fig. 6. A very singular Plant; erect, robust, and rugged: worthy a Place in all Collections of Exotics, and requiring little Care.

Those who have written on the *American* Plants, or of such as cover the Fields of the *East*, have nam'd it, and no one of them without particular Praise.

PLUKENET has call'd it *Heliotropium Americanum ceruleum*. — DODART, *Heliotropium Americanum ceruleum foliis bormini*: and our great and most respected SLOANE has describ'd a Variety of it with narrower Leaves, frequent in *Jamaica*, by the Name *Heliotropium Americanum ceruleum foliis bormini angustioribus*. This HERMAN also consider'd as a distinct Species: but LINNÆUS, with great Justice, has determin'd it no more than a Variety from Accidents of Growth.

This Author calls the Species *Heliotropium foliis cordato ovatis, acutis, scabriusculis spicis solitariis fructibus bifidis*: *Heliotrope*, with rough, oval, heart-shap'd and pointed Leaves, and with single Spikes and divided Fruit. The Gardeners Language calls it *Indian Turnsole*.

The Root is long, white, woody, slender, acrid in Taste, and hung about with many Fibres.

The Stalk is four Foot high, robust, ridg'd, hairy, with thick-set Bristles, whitish and greenish toward the Bottom; but from the Middle upwards stain'd with a florid Crimson.

The Leaves are large, and in the highest Degree singular. They stand irregularly; and they have long Footstalks, hollow'd and wing'd.

The Leaf itself is broadest at the Base, where it has a heart-like Indenting for the Stalk, thence it grows smaller to the Extremity, where it is pointed; the Edge is regularly wav'd and sinua-

ted, and the whole Surface of the Leaf is curdled up, and rough.

Naturally the Ribs and Edges of those Leaves which hang upon the upper Part of the Stalk are purple; the rest of a dusky green; but often, where the Plant is in full Sun, the purple spreads itself over the whole Leaf and its Footstalk; and the Plant, even before it flowers, has a rich glowing Aspect.

The Flowers are not large, but from their Manner of Growth very conspicuous. They are dispos'd in double Series along one Side of long slender Footstalks, which at their Ends curl in a spiral Line, and have been understood to represent a Scorpion's Tail.

They are, when the Plant is properly encourag'd, of a very delicate purple, much upon the blue.

As the Soil and Culture suit the Plant more or less, these will be more upon the red Cast, or more upon the blue; but when they have this true blueish purple, they are in their greatest Perfection.

Each Flower is supported on a very short Footstalk upon the common Branch, but they stand so thick this is scarce seen.

The Cup is form'd of a single Piece, divided at the Edge into five Segments; and the Body of the Flower is made of a single Petal. This is tubular at the Base, and divided at the Rim into five irregular, unequal and obtuse Segments.

The Opening to the Tube is clos'd by five small Scales, which converge at the Point, and form a kind of Star.

In this Part of the Flower are plac'd the Filaments: they are five, very minute, and top'd with

March. top'd with small Buttons. The Style is single; it rises in the Midst from a four-parted Rudiment; and when the Flower is fallen, four Seeds ripen in the Cup naked.

We have told our Student that the Classes of LINNÆUS have their Name from the Number of the Filaments. This Plant is one of the fifth, the *Pentandria*; and its single Style shews it also of the *Monogynia*.

Culture of this TURNSOLE.

It is an Annual, and native of the warmer Parts of *America*, as also of *Africa* and *Asia*: in all these Places it lives in the same kind of Soil, light, dry and sandy, yet not without some Richness.

In *America* it covers the Banks on rising Grounds; and having usually a Soil too fertile for its true Nature, it is luxuriant in Growth, but wants the glowing Colour.

In the *East-Indies* the Leaves are veined and spotted with an elegant Crimson; but in the absolute Sands of *Africa*, it shews its brightest Lustre.

It will not there rise to the Height it reaches in those other Countries, but 'tis throughout often of a bloody purple: so singular, that our rudest Voyagers have gaz'd upon it, and declar'd their Wonder.

In *Europe* we see little of its Elegance; and the prime Gardener MILLER speaks his best Knowledge, when he calls it a Plant of no great Beauty.

The *African* Colour, or even the *East-Indian* Spots, are to be obtain'd only by a peculiar Culture, a Management with which he was not acquainted, and these are its great Recommendation.

Let Seeds be obtain'd, if that can be done, from *Africa*; if not, those of our Colonies, or of the *East-Indies* must be us'd; but as they often come over bad, many more should be sown than on other Occasions.

The Spring is the Season for this; and as the Plant is an Annual, the earlier that is done the better.

Let a Compost be first made for it thus:

Wash some coarse Pit-Sand, till the Water runs from it without Colour. Set it over the Fire in an Iron Pot, and let it be well heated. It will acquire a redish Hue, and this shews it is done enough.

Mix a Bushel of this with five Pecks of Marle,

and add one Peck of black Meadow-Earth. March. Sprinkle on a little Soot, and a Handful of Salt, and throw the Heap up to the Weather.

In *February* fill a Garden-Pot with this, and scatter upon it a little very rich Mould, about a Quarter of an Inch thick: upon this strew the Seeds. Sift over them a little of the Compost; sprinkle the Surface with Water, and set the Pot up to the Rim in a Bark-Bed.

When the young Plants come up allow them a little Water; and as soon as they have Strength for removing, transplant them each into a separate Pot of the Compost. Let these be Pots of the middling Size, for the Plants are not to be remov'd any more.

Settle the Earth to their Roots by a gentle Watering, with Water that has stood in the Bark-Bed or Stove; and then set in the Pots again up to the Rim. Shade the Bed with Mats till they are well rooted, and then by Degrees inure them to the Air.

In the Beginning of *June* they may be finally set out: and for this Purpose a Place should be chosen open to the full Sun.

Hitherto the Plants will be green, or but little ting'd; but from the Time they are expos'd to the full Sun, they will begin to change their Colour: the tenderer Leaves will be blotched and spotted with Crimson, the others of the Colour of red Port Wine: extremely singular and pleasing. They will flower here; and Seeds must be sav'd with Care.

The Plant is so singular that it is worth preserving thro' the Winter; and this is to be done by preventing its flowering, and defending it from Cold.

If one or two of them be transplanted two or three Times during the Beginning of Summer, and the Heads cut off when the Buds of the Stalks for flowering appear, the Plants being remov'd at the Approach of Winter into the Stove, will live throughout that Season, and flower early in Spring.

This is the Management by which we have brought forth several Flowers of Autumn in early Spring: an Article of Gardening little understood, but very pleasing.

The intelligent Reader will see this in the several late Plants we have given in these Numbers, figur'd from Nature at the Time of this Flowering.

March.

March.

C H A P. II.

The Management of the Flower-Garden.

WE have directed the Gardener to shelter his Hyacinths from the Severity of Frosts, without choaking them for Want of Air. Their Stems will, by this Management, now be advancing apace, and he must prepare for their Support. The Weight of a double Hyacinth is too much for its Stalk; which, though thick, is juicy.

There is a great deal of the Beauty lost when the Flowers droop, and this is the Time to prevent it, by giving a proper Help for the Stalk.

Near every Root let there be thrust into the Ground a short but strong Stick; not Willow fresh cut, as I have seen in many Places; for it will shoot at this Season, and drawing Nourishment for itself, will starve the Root.

Let it be a dry Piece of Wood, painted of a pale green, like the Stalk itself, and not exceeding its known and expected Growth in Height. The great Care must be to thrust this so deep into the Ground that it may be firm; so near the Plant that the Stalk may be fastened to it without Violence; and yet not to touch the Root.

It will thus answer the Purpose, and be unseen: for they have little Notion of a Garden, who think tall, carv'd, and painted Sticks an Ornament. The Art is to conceal the Support, and even the Tyeing. This should therefore be done with green loose Yarn, and no dangling End be left hanging.

Let none blame this Attention to the least Things: they are the most neglected.

The Auriculas are in the same Condition with these Plants, budding for Flower: they will require the same Care and Attention; and he who knows his Kinds, and where he is to expect a heavy Cluster, will do very well to prepare for its Support, by a small Stick like the Stalk, and by a Tying of the same Colour.

Let the Plants be carefully guarded from cold Winds and too much Rain: but, on the other Hand, let them not either be choak'd by Covering, or destroy'd for Want of Water.

Let the Air come to them freely, though cold Blasts are kept off; and when the Mould is dry, let them have a little Water; but, in the giving this, Care must be taken not to hurt the Buds. It must be sprinkled from a small Pot round the Edges of the Mould; for if any Quantity of it fall upon the Part where the Bud is rising, it will lodge there, and will rot; or, at least, greatly damage the tender Part of the Stem.

This Care being taken of the Spring Flowers,
N^o 29.

it will be proper to look to the choicer Kinds of those for a more advanced Season.

The Reader will remember what we directed to be done some Time since to the Pots of Auriculas; the same will be now needful to be done to the Carnations; and the flowering of these Plants well depends greatly upon this Dressing.

The preceding Autumn many fine Carnations were directed to be potted for this Season's flowering; it is these that now require dressing.

First let all dead Leaves be taken off, and let the Surface of the Mould then be stir'd with a Trowel, taking Care to break it as far down as can be done without injuring the Roots: then let this broken Earth be taken off, and fresh Compost of the proper Kind put in its Place. This done, give a gentle Watering to all the Pots round the Edges; and repeat it from Time to Time as the Mould grows dry.

Nature is now at work in the Root, forming the intended Flower, and she will be thus strengthened at the Time when that is most needed.

Fix upon some Spots for a second Parcel of those Annuals which are to be rais'd where they remain: these forming a kind of Clusters, tho' not of the most specious Flowers, yet are pretty Ornaments, and serve the great Purpose of Variety.

If they be well dispos'd, they serve as little Thickers breaking in upon the Uniformity of the Plantation in the Borders; and the taller and more specious Flowers shew themselves more distinctly and more gracefully by this Mixture, than when the Eye is carry'd on from one to another in an uninterrupted Manner.

This Week let several Spots of a Yard in Length, and of the Breadth of the Border, be sown for this Purpose, with the *Ketmia Vestcaria*, double Poppy, and Candy Tuft: and in appropriated Places let the Gardener put in some Sweet and Tangier Pease.

Where there is a disagreeable Stump, or other natural Deformity that cannot well be remov'd, these hide it; they will run up the disagreeable Part, and cover it with Flowers as well as Foliage.

All that is to be done to these several Plants is to thin them where they rise too close; and let the Gardener, in this, as well as other Instances, remember that the universal Error is leaving these too near. A few well nourish'd Plants will fill the Spot and answer the Purpose better, as well as be in themselves handsomer, than a greater Number of the same Kinds starv'd and crowded.

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March. The Difference in Aspect of a Garden and a Field, in Respect of such Plants, is, that wild they grow irregularly; and, in the Borders the free Ground is seen between them. These are a kind of Plants which have more of the Weed than the Flower Aspect; and, if not thus managed, the Spots where they rise will have an Air of rude Wildness.

Therefore, when the Plants appear, let all but

a few of the strongest be pull'd up: after this, let the Ground between them be very well clear'd from Weeds, first by Hand; and when the Plants are strong by hoeing, and breaking the Surface. From Time to Time let them have gentle Waterings, and particularly when the Buds appear for flowering: upon a good Supply at that Time depends in a very great Measure the Lustre and the Bigness of their Flowers.



S E C T. II.

The Management of the SEMINARY, for this Week.

LET the Gardener this Week continue the sowing of biennial and perennial Flower-Seeds, for a Supply for the Borders in succeeding Seasons. We have directed the Manner of this in the last Number, and there is little Trouble.

The Kinds proper for this Sowing, are the great *Scarlet Lychnis*, with other of the *Lychnis* Kind not annual; and the *Stocks*, *Campanulas*, and *Greek Valerian*.

The common Method of propagating the last, and indeed most other of the fibrous-rooted Perennials, is by parting the Roots: but we have, in other Instances, shewn the Preference of raising Plants from Seed, and it holds true in a greater or less Degree in all. The Trouble is nothing, and Plants lose themselves by repeated Propagation from parting.

Remove out of the Beds where they are too close, the Yews, Hollies, and Cypresses, planting them to a greater Distance, if they be not yet wanted in the Garden, or ready for it.

This Removal will be attended with no Hazard, if done with Care, and the Earth covered about their Roots; and we have shewn how useful the frequent Removal of young Trees in a Nursery is from its making them shoot many Roots in a small Compass; and suffer less at their last Removal.

In another Bed, let the Seeds of the Fir and Pine Kinds, carefully separated from their Cones, be sown; and the *Sassafras* and *Virginian Cornus* on other Spots.

The same Care is requir'd for all these in the first raising, and it is very little: the Bed should be defended by a few Bushes; and the Ground, when the young Trees appear, kept very clear from Weeds, refresh'd with Water when too dry;

and the Plants, if in Danger from a too hot Sun, are to be shaded by some of the Bushes.

The particular Management for each Kind we shall give under its separate Head; here we remind the Gardener only what is to be done in general.

Whatever Exotic Trees and Shrubs we have directed to be rais'd from Cuttings, in the open Air, will now come under the Gardener's Hand for that Purpose.

Let him select a Part of the Nursery where the Ground is not too dry: let him dig and break the Mould very well; and, dividing it into as many Parts as he intends Kinds, let him plant these carefully, fix and gather up the Mould well about them; and if the Place have not a sufficient natural Shade, let him defend the new Plantation by a Reed-Hedge.

Let the Ground be kept in a moderate Degree of Moisture, neither dry nor crumbly, and perfectly clear from Weeds; they will thus root in due Time, and after one Year will be fit for removing.

Let the Gardener now look carefully over the Beds where he sow'd the Seeds and Fruits of Trees and Shrubs the preceding Autumn; many of them will be now up, and he must cherish and protect them.

If the Ground be too dry, let him refresh it with Water. This must be done in a Morning, two Hours after Sun-rise, and with a light and careful Hand.

He must let no Weeds stand among them; and he must bait Traps for Vermin, and stick up Scarecrows, or hang Lines of Feathers, to keep off Birds.

The Growth that will soon be out of Danger, is now of all others the easiest of Destruction, and the most tempting.

March.

March.

S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

WE last Week gave the Method of planting Vines in a Way practis'd very successfully by a few who have kept it a Secret hitherto: and all that need be added for the present, is, that the Earth must not be suffered to grow at first too dry about their Roots.

For the Sake of those who shall prefer the old Method by Cuttings, (for Prejudice is powerful, and Men of great assum'd Knowledge prefer it) we shall direct the Management in that Way.

The Cuttings planted for this Purpose, should be about fifteen Inches long; they should be Shoots of the last Year; and there must be about a Finger's Breadth of the old Wood cut away with them.

These must be plac'd slanting in the Ground, with only one Eye above the Surface. As to the rest, the common Management serves them, and they rarely fail to grow; but the Advantage is all on the Side of Layers, for they raise better Vines, and in a much less Time; and they are more certain.

The Method by Cuttings was here an Expedient invented by cunning Idleness; and it has been ill introduced, in general, as preferable to the other. The Layer when planted is to be cut: and in this the common Practice is also erroneous.

We will suppose two trailing Branches upon it, as is customary: every one knows these are to be reduc'd, but the proper Manner is not so well known. They are commonly shortened to two or three Buds a-piece; but it is better to take off one Branch and shorten the other. This we shall consider at large treating of the Vine.

In favourable Seasons some of the Fruit-Trees

against Walls will begin to blossom: these must be defended from Frosts, or sharp Winds, or there will be Mischief from their early Opening.

For this Purpose, a Reed Fence, or a Guard of Canvas let down from the Top of the Wall, will be very useful. Whenever the Nights are frosty these are to be let down; but the Trees must be no longer covered than the Danger lasts; for that would otherwise bring on new Hazards.

We have explain'd this in our Directions for guarding the Beds of curious Flowers: they must not be made too tender while they are protected from the severest Nights: they would that Way be in Danger from every chill Blast afterwards; therefore these Defences must only be us'd during the severe Nights; and the Trees must be left open to the Sun at all other Times.

After this Defence is left off if there come dangerous Blasts, the best Way will be to stick in a few small Pieces of Furze-Bush in proper Places, so as not to hurt the Blossoms, and they will keep off the Danger.

This Week let the Raspberry Beds have the Refreshment of a good Digging. Those who are accustomed to the common and successful Practice of Nurseries, know how close the Earth may be dug between the Rows of young Trees without Danger.

The same Method is to be practis'd here: the whole Ground between them must be dug up deeply and carefully, and be very well broke with the Spade. This will encourage the Roots to shoot new Fibres in Abundance; and the Surface will be open to the Dews and Rains.

S E C T I O N IV.

C H L O R I S, or the K I T C H E N - G A R D E N.

THE Cauliflower Plants which we directed some Weeks ago to be rais'd upon a Hot-Bed, will now be of a Bigness to require transplanting.

A second Hot-Bed must be prepar'd for them, and it must be covered with an Inch more of Mould in Thickness than the last. This Bed must be kept covered till the Mould has acquired a proper Temper of Heat, and then the Plants must be carefully taken out of their first Bed and set in this, at the Distance of two Inches every Way. The Bed must be shaded, and they must be wa-

ter'd till they have taken good Root: but after that the Glasses must be rais'd in the Middle of every fine Day, and they must have Air, that by Degrees they may be brought to a Hardiness for transplanting. The Gardener must remember they are, after this, to take their Growth in the open Ground; and this gradual hardening of them, will, at the same Time, prevent their running up too weak.

This Week is a very proper Season for sowing Red Cabbage. The Ground must be well dug, and carefully levell'd for it: and in a Month they

March. they will be fit for their first Removal. They will then require a cool shady Border, with a fresh but not rich Mould, and should be planted at about four Inches Distance.

They will thus take their first Shoot properly, and will escape the Danger of running up too long shank'd.

This Week will do very well for the sowing Parsneps and Carrots: we have ordered our Gardener to do this more than once already; but, to guard against Accidents, it will be very proper to put in a Crop now. The same Rule he may observe with Leeks and Onions; and several other of the common and useful Products: they will have the Advantage of Time that are put in earlier; but there is no Season throughout the Year at which the Seeds will shoot more freely than now.

Those who like the Alexander Flavour may sow a Crop now; they must be afterwards blanched up in the Manner of Celery; and to many Palates are preferable to that more common Stalk.

The Sowing at this Season is preferable to others, because when put into the Ground later, they grow slowly; and, when earlier, they run up to Stalk.

This Week let a Piece of Ground be dug up for Dandelion. It is a pleasant and tender Plant, of the Endive Nature; and, when well manag'd, greatly preferable to that: better tasted, and more tender: it ought to be prefer'd also as a more wholesome Plant.

The *French* have taught us to eat it in Sallads; and many, indeed most, are fond of it; but none of the Gardening Authors have directed the Management.

Mr. MILLER condemns it as a Weed; and advises such as would prepare it for Food or Medicine, to pick it up in the Fields. There is no Plant whatsoever so easily cultivated, or so much improv'd by Culture.

The true Method is this:

Let a good Quantity of Seeds be gather'd from the wild Plants, just when the Down begins to shake, and let them be taken from the largest and rankest. Culture will take off all the Strength of Flavour, and these Seeds will yield the strongest Plants.

Let a Bed be dug up in a shaded Part of the Ground, working in some old Dung from a Melon-Bed, in the Digging. Scatter the Seeds carefully and regularly over the Surface, when it has been laid perfectly level, chusing for this Work the Evening of a mild Day. Sift some Mould, about a Quarter of an Inch Thickness over them, and give a gentle Sprinkling of Water.

We need not tell the Gardener Seeds of Dandelion will quickly grow, but it is his Business to promote this as much, and keep the Plants growing as fast as he can, for upon that depends the Tenderness and Flavour of the blanch'd Part.

Repeat the Waterings gently every other Evening till the Plants appear, and then give them a good Sprinkling every Evening.

Dig up a Piece of very mellow Ground in a Part of the Kitchen-Garden not too much expos'd; and when the Plants have a little Strength

March. thin them to six Inches Distance, planting those which are pull'd up, in the Piece of Ground dug for that Purpose. Water these, as well as those which remain in the Seed-Bed, freely; and by all Means encourage their Growth, taking up Weeds as soon as they appear; and breaking the Ground between them.

By this Means the Leaves will spread into a Circle, and soon grow to a good Size; the Bud of the Stalk would soon after this appear, but this must by all Means be prevented. The taking them up will stop it; and the Time is come to do that for blanching.

Let a larger Piece than either of the first be dug up for this Purpose; let it be rich Mould that has not lately been dung'd, and the Place not too much expos'd to the Sun: let it be dug the full Depth of the Spade, and broke fine.

Level the Surface, and draw Lines a-crofs and along at eight Inches Distance.

This being ready, forbear watering the Plants for two Days. Then in an Evening take them up. Open a Hole with a Trowel in the Centre of each Square, and in each Hole place one Plant, so deep that the Leaves may be bury'd, except their Tops.

To prepare them for this Planting, the Fibres of the Roots must be trim'd, and the inner Leaves gather'd together, and ty'd loosely at the Top with a Piece of Bass. Then plant them as deep as we have directed, so that the Point of the Bundle may be level with the Surface: draw up the outermost Leaves about these, and then carefully gather in the Mould.

This done, cut off the Tops of the outer Leaves, and the Nourishment will all go to the bury'd Part. Give the whole Ground a gentle Watering; and leave them to Nature.

The Plant is so hardy, that its Growth will scarce be at all check'd by this; the old Leaves which were on the Outfides, and were not ty'd up, will by Degrees decay; but they will, for some Time, assist greatly in the blanching of the others: the Leaves which are ty'd will grow up from their Tops, and the Part under Ground will become tender, white and delicate, serving only as a kind of Footstalks to the upper Part of the Leaves.

The Ground must be kept clear of Weeds, and the Plants water'd only once in three Days, after they begin to grow well; for if wetted too much at first they would rot.

As they shoot up the Leaves higher, the Mould must be drawn up about them; and they must be taken up for Service as wanted.

This is a Crop that should be us'd off quick; for the great Excellence of it is the bringing it so soon to a Size; and this is a Season when it cannot by any Art be kept long from shooting the Flower-stalk.

A Month after the first Crop is sown, a second should be put into the Ground; and this Sowing repeated once in five Weeks during Summer. There will by this Means be a continual Supply, even throughout the Winter, for the late sown Plants will last a great while.

E D E N:

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R X X X .

For the first Week in *A P R I L* .

S E C T I O N I .

F L O R A , or the P L E A S U R E - G A R D E N .

C H A P . I .

Flowers and curious Plants new in their Perfection.

I. P R O L I F E R O U S O X L I P .

April.
Pl. 30.
Fig. 1.

IN this and the succeeding Chapter we treat of Varieties rais'd, by the Gardener's Art, from Plants wild in our Pastures.

The Oxlip itself, in the simple State, is consider'd by the strict Eye of Science but as a Variety of the Primrose Kind : it appears indeed a mongrel Breed between the common Primrose and the common Cowslip, the Primrose Flowers appearing cluster'd in it upon the Cowslip Stalk.

We have already acquainted the Reader, that LINNÆUS considers the Primrose and Cowslip but as two States of the same Plant ; the Oxlip therefore it is plain he must rank with them under the Name of a Variety ; and 'tis a Luxuriance in the flowering of that Plant we here lay before the Reader ; the Offspring of the common Oxlip-Seed well manag'd.

The old Botanists held the Primrose and Cowslip distinct in Species as Appearance ; and this Plant, in its wild and simple State, a Species separate from either. They call'd it *Paralysis major*, *Paralysis inodora aut vix odora*, and *Verbasculum pratense*, aut *Sylvaticum inodorum*. In the specious Variety of which we treat in this Place, they call'd it *Paralysis flore geminato inodora*.

The Name of the whole Kind in the LINNÆAN Botany, is, *Primula foliis dentatis rugosis* ; and he

gives, as the trivial or common Name of the Oxlip, *Primula elatior* : this Kind, if dignify'd with a separate Name, must be call'd *Primula elatior prolifera*.

The Root is compos'd of numerous very long Fibres, connected to a small Head.

The Leaves rise without Footstalks, and are large and oblong, considerably broad, and of a pale green ; whitish on the under Side : they are rough on the Surface, and have irregular Veins ; and they are a little wav'd or indented at the Edges.

The Stalk rises in the Midst of these, and is round, firm, upright, and six Inches high : its Colour is a pale green, and it is a little hairy. On the Top of this main Stem there is a Circle of Red, and from this Part rise six or eight slender Footstalks of considerable Length, supporting the Flowers, spread out by this Means, into a kind of Umbell.

These Footstalks are very delicate ; of a fleshy Hue, and a little hairy : on the Top of each stands a double Flower ; not full of Petals from the same Base, as in the common Way ; but proliforous, as in that elegant *Datura* describ'd in a preceding Number. One Flower crowns each

April.

April. Footstalk, and from the Hollow of this rises another, equal in Bigness and of like Form.

The Flower resembles the Primrose in Shape; but it is one of the Singularities of the Plant, in this State of wanton Luxuriance, that there is no Cup: the first or undermost Flower supplies the Place of a Calyx to the other; but it is notwithstanding an absolute Flower, not in the least like a Cup.

In the wild State of the Plant there rises such a single firm Stalk as we have nam'd, crowded with a Number of Flowers on separate Pedicles, produc'd from its Summit: and often from the same Root there will rise one or more single Footstalks, bearing each one Flower.

This shews LINNÆUS right in making the Plant a Mongrel between the Cowslip and Primrose, and is his Reason for connecting them all: but in either Case, the Flower has its long hollow Cup, as the Primrose and as the Cowslip have: Nature in this prolific Kind bestows an under Flower in the Place of that Appendage.

In the *Polyanthous* we often see the Cup swelling beyond its natural Size, and stain'd with the purple of the Flower, but that is much less strange. In this Case, an absolute Flower supplies the Place of it.

The Plant from this receives its great Singularity; and the Appearance is not less beautiful. The Segments are wide expanded, and the Colour is a bright and fine yellow.

When the Plant is not well manag'd, the Flowers will be smaller and paler; but when full nourish'd, and not stinted for Room, they have a very lively Tinge.

The Construction of the Flower we have describ'd before, for it is the same with the others of the *Primula* Kind; one Petal forms it, and this is tubular at the Base. It has a short half round Neck, and from this Part it swells out into a broad expanded Rim, cut into five Segments, which are obtuse and heart-fashion'd.

Within the tubular Part of the Flower arise five Filaments; they are short, and have pointed and convergent Buttons. Amidst these appears a single Style: it rises from a roundish Rudiment, which afterwards becomes oblong, and holds in a single Cell numerous Seeds.

Five Filaments shew the Plant one of the *Pentandria* of LINNÆUS, the fifth of his Classes; and the single Style declares it one of the *Mono-gynia*.

Culture of the PROLIFEROUS OXLIP.

The Gardener is directed by his profess'd Instructors to part the Roots of this Plant in Autumn, and thus propagate and encrease it: but we have told him often, that those Plants, whose Elegance has originally risen from Culture, will degenerate.

The longer they are left in their Place, and the less Care is taken, the sooner they degenerate; but at the best, when only parted Roots are us'd to propagate them, they will grow worse from Time to

Time: the Flowers will be smaller, and their Colour fainter. April.

This is the Distinction of the Effects of Art from the absolute Products of Nature. The last continue invariably the same; and if at any Time Chances alter them, they will return to their original State.

Great Nourishment may enlarge a wild Plant to twice its Size; or stinted Supplies may check its Growth; but, in either Case, Seeds from it in common Ground will produce the Plant as at first; or the same Root with common Nourishment return to its first Condition.

Thus permanent is Nature: but in the Luxuriances rais'd by Art the Course is otherwise; and that upon the same Principle. Nature is at the Bottom; and will take every Advantage of returning to herself.

Thus when the prolific Oxlip, rais'd from Seed, is propagated by parted Roots, the Flowers lose their fine Colour, and diminish in Size; and, if left neglected, they will become single, small, whitish, and absolute Primroses. One on a Stalk will at length rise from that Root, or its separated Parts; whence better Culture produc'd these elegantly doubled Flowers.

If the Gardener will follow the easy Course of parting the Roots, let him every other Year give them a new Soil; but if he would distinguish himself by finer Flowers than others, and raise them beyond what himself has before seen, let him proceed thus:

Let him mark among the Plants when in flower such as are strongest in the main Stalk, and have the largest Tufts; the Flowers must also be large: the Degree of Colour he need not regard, for that will be encreas'd by his succeeding Management.

Let him mark several of these fine Plants with Sticks, and watch their Seeding. All will not ripen them: but where he sees the Rudiment well set, as it is very conspicuous in these naked Flowers, let him take Care of those for Seed. Let him break the Ground about them with a Trowel, and once every Day give a very gentle Watering.

Let him continue this till the Seed-vessels have acquir'd their full Bigness; but after that let him give no more Water: they will ripen stronger Seeds without it.

When the Heads are harden'd upon the Stalk let him cut them off, and lay them to dry leisurely upon a Shelf: in a Month let him pick out the Seeds, and spread them upon a Paper, and at the same Time let him prepare the Border for them.

This must be in a Part of the Garden open to the South-East; and under some Shelter and Shade of Trees. Let him mix four Parts common Pasture-Earth, and one Part Mould, from under a Wood-Pile: let this be put into the Border, and the Seeds scatter'd on the Surface. They must be sown thick, for many will fail.

Throw some loose Thorn Bushes over the Ground; and thus let it remain the Winter, only weeding it at Times. In Spring there will be a Number of young Plants: let them be thin'd to eight

April. eight Inches Distance, taking up the weakest, and planting them out. Let them be water'd and kept clear from Weeds; and in Autumn, when the Leaves are decay'd, let a little fresh Mould be sifted over them. Thus they will be strengthened during Winter; and the next Spring they will flower.

The finest must be left in the Bed, the inferior Kind taken up and planted elsewhere, for none will be very poor ones: and after this they must be taken up every Autumn: fresh Mould,

April. made up as the former, must be brought into the Place of it; and the Roots, trim'd at the Ends of the Fibres, must be planted in it, at ten Inches Distance, and cover'd up to the Bud.

Thus they will flower every Year stronger; and from the best of their Flowers Seeds should be sav'd, and every Year sown upon the Ends of the same Bed.

They will raise a Supply, and the Flowers will continue improving from Succession to Succession. There are no Limits to the Effect of Culture.

2. GREAT DOUBLE COWSLIP.

Pl. 30. So much of what has been said of the last Fig. 2. Plant is applicable to this elegant Variety, that a few Words will contain its Nature, Characters, and Culture. As that is an Improvement of a Variety from the Oxlip, this is the Cowslip of our Meadows, enlarg'd, enrich'd, and fill'd by a judicious Culture.

Both rise from the same original Stock, both therefore belong to the same Class and Section; and however they may be obliterated by the Multiplication of the Petals, both have the same Characters.

The old Botanists call it, in this State, *Paralysis hortensis flore pleno*. LINNÆUS refers it, with the rest, to the original Species, *Primula foliis dentatis rugosis*, Rough dented-leav'd *Primula*: comprehending the three Field Varieties, Primrose, Cowslip and Oxlip, under that Term, and with them all the Luxuriances from each rais'd in Gardens.

This differs from the common Cowslip of our Meadows only in the Number, Bigness, and double Fulness of the Flowers.

The Root has a small Head, hung with innumerable Fibres.

The Leaves are numerous, rough on the Surface, indented at the Edges, of a pale green, and mark'd with paler Veins: narrow'd at the Base, so as to resemble Footstalks; and paler on the under Side than upper.

The Stalk is single, round, upright, a little hairy, of a pale green, and ten Inches high. From its Top, where there is a yellowish Circle, and sometimes, but not constantly, a membranous Appendage, serving as a general Involucrum, rise from eight to twelve, or more slender Footstalks: greenish, and about an Inch in Length.

Each of these supports one Flower. This is not naked as in the preceding Plant, but covered at the Base with its proper Husk. This is of a pale green, long, hollow, divided by five Segments at the Edges, and rib'd in five Places its whole Length.

The Flower consists of numerous Petals; in Nature it should be but of one, divided indeed deeply into five Segments; but here the outer Divisions, when the Doubleness is perfect, are continued to the Base, so as to form a kind of di-

stinct Petals, and others rise innumerable within them. The Colour and the Bigness of the Flower depend in a great Measure on the Degree of Culture.

When perfect, the Cluster of the Petals is large, and the Colour a Saffron yellow. It will be sometimes so deeply tinged with the Red, as to appear a kind of Orange Scarlet. When less Care has been taken in raising the Plant, and when it has stood to degenerate, the Flowers are smaller, paler, and less double.

Culture of this COWSLIP.

The same Soil, Situation and Management, suit this as the other, only that the Mould should be of a somewhat firmer Nature, and the Place a little more expos'd to the Sun. The Strength of the Root will depend upon the former Consideration; and the Colouring of the Flower will be influenced by the other.

It is but rarely these double Flowers produce Seeds; but whenever that happens, it should be watch'd with Care.

The finest double Cowslips may be produc'd from Seeds of the single Kind; but there will be a great deal of Time and Trouble sav'd by beginning from the Seeds of a double Flower.

Whichever Method be taken, the Course of Management must be exactly the same. The Seeds must be sown upon a Border in the same Manner as those of the former; and from the Plants thus rais'd Seeds are to be sav'd again, and thus the first Improvements rais'd to greater Elegance.

From all these, Partings of the Roots, when of proper Growth, will multiply the Plants; and and this is to be done toward the End of *August*. But the Method by Sowing continues Improvements, and adds Variety.

In this, as in the preceding Plant, and many other Instances where artificial Heat is not needed, we advise the Gardener every Year to save the Seeds of some one fine Flower, and sow them on the Ends of the Bed. No Trouble is requir'd, and a few young Plants of the same Kind with the others can be no Blemish.

The

April. The strongest only should be suffer'd to remain; and these at due Distances. They will in their natural Time rise to Flower, and there will be

produc'd several Varieties, and these often more rich than the most elegant and improv'd of the others. April.

3. GREAT VIOLET CROCUS.

Pl. 30. Among the vast Variety that Culture has produced from the Seeds of the common Crocus of the Spring, we have not one more conspicuous than this; tho' several, on a near View, more delicately painted.

These we have occasionally nam'd before: this must not be deny'd its Place. Less Care and Culture raise it; and beside its masculine and noble Beauty, it has the Advantage of early flowering and of well ripening the Seeds.

It is useful therefore to the good Gardener in more than one Capacity: we have mentioned on several Occasions what may be done by sowing and re-sowing of these and other Flowers; and the first Care is to be a proper Stock. For all the feather'd, painted, and double Crocus's, there is not a Stock so good as this: the whole Plant is bold and large, the Petals of the Flower are well form'd, and the original Colour is strong to a great Excellence.

All the Time the Gardener is expecting Seeds from it, his Borders are decorated with its native Beauty.

The more correct Botanical Writers, we have before told the Student, call all the Crocus by one common Name; but 'tis fit we tell the Gardener how this has been distinguish'd among the earlier and less critical.

The Breadth of the Leaves, and Bigness and Colour of the Flower, were its first Marks of Distinction. Hence CLUSIUS call'd it *Crocus vernus latifolius purpureus flore majore*. This J. BAUHINE copy'd, and CASPAR little alter'd: his Name is *Crocus vernus latifolius flore purpureo magno*. The others call it *Crocus vernus maximus*: and the industrious Dutch, in whose Gardens it long since attain'd high Excellence, commemorating the Place whence they receiv'd the Roots, *Crocus purpureus Neapolitanus*: Purple Crocus of Naples.

LINNÆUS joins it with the other Varieties, under the common Name *Crocus spatha univalva, radicali corollæ tubo longissimo*: Crocus, with the Scabbard from the Root of one Piece, and the Tube of the Flower very long.

The Root is a large Bulb, covered with a ragged brown Skin, and sending from the Bottom many Fibres.

The Flowers rise from the Top of the Root, and three or four Leaves with them: these in both Kinds resemble those of the common yellow

Crocus, but that they are longer; the Whole being a bolder and more robust Plant.

The Leaves have a considerable Breadth, and they rise nearly upright, till the Dews weigh down their Tops. At the Bottom they are whitish, blanch'd by the Mould; in all other Parts of a blackish green; but there runs along the Midst a white Line, much broader than in any of the other Crocus's. The Leaves also are shorter in Proportion to their Breadth, and they are more pointed.

The Flower rises from the Root, supported by its own long tubular Base, which is strengthened by the Scabbard. This is a brown Membrane, rising with it single from the Root, and surrounding it nearly to the Place where it spreads out to form the Body of the Flower.

The Segments which make the Body of the Flower are six: they are oblong, pointed, and swell out in the Middle. Their Colour is a deep blue, with a Tinge of Purple, very like that of the Violet, and with the same Velvety Hue.

There is sometimes a Line of White along the Middle, but this deviates from the Character of the Flower: the Variations are innumerable; and every Time the Gardener raises Seedlings he will have additional Kinds: we here describe the plain Flower, and unless these go farther than the Paleness of a single Line, it is better to be perfectly uniform, and without them.

The Student knows already, that three Filaments are found in the Flower of the Crocus, and in their Centre a single Style. This refers the Plant to the *Triandria Monogynia*; the third LINNÆAN Class, and its first Section.

Their Number and Situation are the same in all the Varieties, but their Colour is less fix'd in this Flower; they are white, and they are crown'd with vast yellow Buttons. These diversify the Flower, and the Style more: it is pale in the Body; but its Stigma or Top, which is large, and divided into three Parts, is of a beautiful gold yellow.

In an Evening the Flower has a light Scent: it is singular and not unpleasing.

The Culture of this must be the same with that of the other Crocus's which we have describ'd before. And in the raising Seedlings, there will, together with many Varieties, be some noble Flowers of the original Colour.

April.

April.

4. AUSTRIAN DWARF IRIS.

Pl. 30.
Fig. 4.

The *Iris*'s, like other Plants long cultivated in our Gardens, appear a confus'd tho' elegant Family. The Species in Nature are many, the Varieties rais'd by Art are more; and 'tis not in the common Eye to distinguish which has the certain, which but the casual Distinction.

We shall endeavour to unravel the perplex'd Thread, following Nature and her great Minister LINNÆUS, arranging here, and in some succeeding Chapters, the several Varieties under those Species to which they belong.

The *Austrian Chamae-Iris* is Parent of a numerous Family of Gardeners Variations; and has been describ'd under its various Forms as if many Species were found in them.

To have denominated the original Plant from the Colour of its Flower, were to have left it unknown to the Gardener, because of the many Variations under his Care. We have therefore nam'd it from that Country where every craggy Hill and Sun-burnt Thicket shews it native; and where in richer and more favourable Soils its Colours acquire a Lustre hardly equal'd in our Gardens.

The common Writers call it *Iris humilis latifolia*, *Chamaeiris latifolia*, and *Chamaeiris minor*. To these Names they add farther Distinctions from the Colour of the Flower, of whose Changes we have spoken; and it is not wonderful, that in allowing this as a Character, they have run into Confusion, and describ'd it many Times over.

C. BAUHINE calls it *Chamaeiris minor flore purpureo*, and *Chamaeiris variegata*, purple and variegated Dwarf *Iris*: others, *Iris violacea*, Violet *Iris*.

LINNÆUS, taking his Additions from more certain Marks, calls it *Iris corollis barbatis caule foliis brevioris unifloro*: Bearded *Iris*, with the Stalk shorter than the Leaves, bearing a single Flower.

The Root is tuberous, irregular, and whitish: it runs just under the Surface, and not unfrequently above it; and is thick, knotty, and of a faint but not unpleasing Smell. The Taste acrid and nauseous.

The Leaves are numerous, and of a pale but elegant green: they are broad, and they terminate in a Point, they are three Inches in Length, and of a firm Substance.

In the Midst of these rises a single Stalk, firm, knotty, flatted, and about two Inches high, bearing a single, but large and very conspicuous Flower. The Leaves exceed the Stalk in Height, but the Flower rises above them; and the whole Plant has a most pleasing Aspect.

There is no Smell; but Nature has well aton'd for that Defect in Size and Colouring. Naturally the general Colour is a blueish Purple; paler and less glowing where the Soil does not suit; but in more favourable Ground wild, it becomes deep and very rich in Tinct.

.N^o 30.

This is the most natural Diversity; but it is sometimes white; and the same Defect of Nourishment which denies Colour to the Flowers, reducing also their Substance, they become papery, and, though the White wants Lustre, delicate and not unpleasing.

The last Variation seen in the wild Plant, is, that the Petals are stain'd with innumerable Veins, of a perfect violet; which, when the Body of the Flower has more of the purple, and less of the blue Tinct, gives a wonderfully pleasing Variation.

Thus far Nature wantons in the Colouring of this Flower; but in Gardens the Luxuriance and Change are endless.

The bearded Part at the Base of the Petals, which is slighter in this than many other Species, is of a deep blue: the Petals that stand upright will be of a pale, the others of a deep purple; both plain, or both vein'd: the upper Petals will be Flesh Colour, vein'd with purple, or stain'd with white; the others blue with yellow.

The whole Flower will be Flesh-colour'd, stain'd with a deep purple, in regular and beautiful Veins; and this either throughout or in the upper Petals only; the others being painted with a great deal of yellow.

The lower Petals will be sometimes perfect gold, or vein'd lightly with a fleshy Crimson; the upper ones in various Degrees purple.

These are the universal Tincts, and these the more peculiar Manners of their Distribution. A Volume might be employ'd to describe them in one well cultivated Border.

We have consider'd hitherto the Colouring of the Flower, but we are now to lead the Botanical Student to its Structure; which is not less singular.

It rises seemingly naked from the Summit of the Stalk, but at some Distance below there is a kind of filmy Scabbard, slight and inconsiderable.

Six Petals form the Flower, and they are truly distinct, tho' united by their Bottoms. They are oblong, large, wav'd at the Edges, obtuse at the Ends, and variously dispos'd; three are plac'd outward, and these droop: three others stand inward, and they are erect; and at the Base of each of the three outer Petals there is a bearded Line: this is the Nectarium of the Flower. It is not so conspicuous in this as in some other Species, but lies in a Manner bury'd in the Hollow of the Petals.

The Filaments are three, they are situated upon the lower Petals, and they have oblong depress'd Buttons.

The Style is single, and very short, but its Top or Stigma, is extremely conspicuous, large, and divided into three expanded Segments.

The Seed-vessel is oblong, and pointed, and contains in three Cells numerous large Seeds.

4 X

The

April. The Class of this Plant is read distinctly in the three Filaments: the third in the LINNÆAN System receives all such; and the single Style shews it one of the first Section: its Place therefore is among the *Triandria Monogynia*.

Culture of this IRIS.

The Gardener will not need be told that a Plant with so large, tuberous, and spreading Roots, may be propagated by parting and dividing them; nor can he forget what our Lessons and his own Experience have join'd to inform him, that when the Beauty of a Flower depends upon the staining of its Petals, the Method to obtain it in greatest Perfection is from Seeds.

Let him guard against some common Errors. If the Soil be too rich, the Plants will be luxuriant in Leaves, but the Flower will want its Beauty; and if they have too much Sun, the Stalk will be drawn up in Height, and the Flower will not only lose much of its Lustre, but the Plant will want its natural Singularity of Aspect, which lies in a great Measure in the Shortness of the Stalk.

In the moist suited Soils of *Austria* there is no Stalk above the Ground; but the Leaves expand, and the Flower rests by its Base upon the Surface. This LOBEL saw in his Excursions, and he has well describ'd it.

In his Time it appears that an improper Management gave it, in the *Dutch* as well as *English* Gardens, a Stalk of eight Inches or a Foot high, and starv'd the Flowers in Proportion. They were on these tall Supports, small, pale, and often faintly yellowish.

Let these Cautions remain in the Remembrance of the Gardener who proposes to raise the Plant; and he will not fail of Success.

The best Soil is a rich Mould, not too damp, and the fittest Exposure East and a little South.

Let a Border in such a Situation be dug out, and its Place fill'd with the following Compost:

Mix a Load of rich Meadow-Earth with half a Load of Pond-Mud, two Bushels of Sand, and three of old Cow-dung. Let these be put together in Spring, or 'twill be better if in the preceding Autumn; and while they lie in the Heap to mellow with the Weather, let Seeds be sav'd.

For this Purpose, let the Gardener mark two

or three Flowers; let them be such as are large, deep colour'd, with some yellow in the Variegations; and with short Stalks.

Let the Roots be refresh'd with Water while the Seed-vessel is enlarging; and let the Tops of the Leaves be cut off.

When it has the full Size, give no more Water; and when the Seeds are ripe, and the Husk dry, carefully cut it off, and lay it on a Shelf, to burst at Leisure. When the Seeds have been spread abroad eight or ten Days they will be fit for sowing.

Let them be kept no longer out of the Ground. Let the Compost be thrown into the Border, and the Surface levell'd. Scatter on the Seeds not too thick, and sift over them a Quarter of an Inch of the same Mould. Throw a few loose Bushes over the Border, and leave all to Nature.

When Weeds appear take them up by Hand, and again lay on the Bushes. In Spring watch for the young Plants, clear away Weeds carefully, and refresh them with gentle Waterings.

When you can see which are the stronger Plants, take up the weaker where they grow too thick, and leave the Plantation at about five Inches Distance.

All Summer keep the Bed clear from Weeds; and when the Mould is too dry gently water it.

At Autumn sift on half an Inch of new Mould, and the next Spring many of the Plants will flower.

Mark those which promise best, that is, such as have largest Flowers; and those most variegated, and with the strongest Colours.

Leave these in the Beds at about a Foot Distance; and in Autumn take up the rest. Plant them out into another Border of the same Compost, in the same Exposure, and with the same Distance.

They will flower stronger the succeeding Year, and it will then be known, not before certainly, which are worth preserving.

A Stock of fine Flowers being thus rais'd, let the most perfect and beautiful be every Year mark'd for Seed; and by a repeated Sowing in this Manner, the Gardener will have endless Variety and Beauty.

5. DOUBLE LEMON DAFFODIL.

Pl. 30.
Fig. 5.

We have nam'd many of the Gardeners favourite Daffodils, and have yet several more to mention: they rise from Species we have described before; therefore few Words will serve for their Botanical Explanation; and their Beauty is sufficient

to recommend them to the Gardener's most attentive Notice. Of these the Double Lemon Daffodil is far from the least conspicuous. It is familiar in full Perfection in the Gardens of *Holland*; but though not unknown in *England*, it does not

April. not often shew itself with us in the proper Lustre.

It is one of those elegant Varieties produc'd from the common *English* Daffodil; but the natural Characteristic of that Plant, its long and large Nectarium, is so obliterated under this State, that were there not other certain Characters in the Form of the Leaves and Production of the Flower, it would be easy to refer it to some other Kind.

The Student knows the Flower of every Daffodil is compos'd of six Petals and a Nectarium, which Gardeners call the Cup. This singular Part is short in some, and Wheel-fashion'd; in others, long, deep, and very large.

'Tis thus in the common *Narcissus* in its wild State; and we have seen how the Gardener changes its Appearance.

Originally it is only a little wav'd about the Edge: the first Effects of Culture make the Undulations so many Indentings; from this State it becomes fring'd and ragged in a wild Variety of Forms; and, as the extreme Force of Culture in the present Instance, it is cut deeply into a Multitude of Segments, resembling so many Petals.

These mix themselves with the proper Petals, from which they are distinguish'd only by being a little narrower; and form together with them a vast and very elegant Flower.

In this State many of those earlier Botanists, who did not distinguish between the Characters of Varieties and Species, have nam'd it as an original and separate Plant.

DODONÆUS calls it *Pseudo-Narcissus calyce pleno multiplici colore luteo*; and others have so nam'd it after him.

The LINNÆAN Botany disclaims distinctive Names for the Varieties of Flowers; and we have already told the Student, the original Plant is the common *Narcissus*, this is call'd by that Author *Narcissus spatula uniflora nectarii limbo campanulato crecto petalo aequale*. The very Characters on which this Title is founded are lost in the present Condition of the Flower.

The Root is a Bulb, somewhat oval in Form, full of a slimy whitish Juice, and furnished at the Base with many Fibres.

The Leaves are numerous, long, moderately broad, obtuse, and generally brown at the End; sometimes also ting'd with that Colour along the Edges, and elsewhere of a pale green.

The Stalk is flatted and edg'd, striated; of a pale green, simple, and a Foot high.

Its Top supports, as well as it is able, one vast Flower; the Weight is more than can be carry'd erect by that slight Neck, and it droops a little.

Its Construction we have describ'd already: its Colour is a delicate Lemon yellow; and the Segments are long, obtuse, wav'd at the Edges, and dispos'd in a wild and irregular Manner, not as in many double Flowers, in a Number of Series. The Smell is slight, but not agreeable.

The Structure of the *Narcissus* Flower we have describ'd in a preceding Number; and the Student knows 'tis not in these double Kinds the Parts of Impregnation are to be search'd, or Characters of the Class to be found.

With regard to the Variations seen in this State from Accidents of Culture, they principally regard the Colour. The Segments will be in some Flowers ting'd at the Tips, with an Orange Colour, or a redish Hue; sometimes this Ornament will extend itself down the Sides of the Segments; and they are in other Cases Orange-colour'd throughout.

This however is not pleasing, nor indeed is any Variation from the true Lemon yellow so well as their keeping wholly to that Colour. As the general Tinct is thus in some Flowers deeper, it will be in others paler, than even this Lemon or strawey Hue, but in this Case it is faint and lifeless.

Culture of this Daffodil.

Tho' we know the Stock from whence this Flower is deriv'd, it is one of those Kinds not readily to be obtain'd from Seed. The usual Way of propagating it is by Off-sets from the Roots; and these are to be treated as we have directed for the other Kinds.

But tho' it is not easy to raise it from the common *Narcissus* Seed, yet the Gardener who follows our general Instructions of sowing the Seeds of a good Plant in that Species, and resowing the Seeds of the best Flowers rais'd from those, will not fail, amidst the Varieties he shall produce from those several Proceedings, to see some of the true double *Lemon Narcissus*. These will be of various Degrees in Colour, and even the meanest full of Beauty.

April.

April.

6. PURPLE AURICULA.

Pl. 30.
Fig. 6.

We introduce the Student here to a large Family, if he accounts the Gardener's Products distinct Members of it; and shall occasionally give the Characters and Culture of the most esteem'd Kinds.

In this Place we are to acquaint him with the Nature of the Plant; and the Origin of those elegant Varieties. We have selected for that Purpose, a Species in which the Leaves and Flowers have their proper and distinctive Marks most conspicuous, and from which Culture will be able, as a common Stock, to raise many of the others.

The Auricula, so specious in our Gardens, is a native *European* Plant; and in its wild State is not without Beauty. Its general Aspect is small, and with a bending Head of a few yellow Flowers: where the Soil more suits, and other Accidents favour, the Flowers are larger and more numerous; they form an upright cluster'd Head, and their whole outer Part is purple; only the Central Spot, or, as the Gardeners speak, the Eye, retaining its original yellow.

It is in this State we describe and figure it, the Form of its highest Perfection in the Field, and naturally its first Improvement from that State in the Garden.

The earlier Authors have consider'd the yellow and purple Auricula as distinct Species, and call'd them *Auricula urfi flore luteo*; and *Auricula urfi flore purpureo*.

C. BAUHINE, who calls them *Sanicula Alpina lutea*, and *Sanicula Alpina purpurea*, has his Followers.

Our Name Auricula, which Gardeners mispronounce *Reclase*, and some speak *Ericula*, is the first Word in the old *Latin* Term, *Auricula Urfi*, *Bear's Ear*; the Form of the Leaf giving Occasion.

LINNÆUS joins the Plant, in all its Varieties, to the *Primula*, the Cowslip Kind. He also reduces the yellow and the red to one Species, as no more than Varieties of Growth, and names the Plant *Primula foliis serratis glabris*: Smooth serrated-leav'd *Primula*.

The Gardener will be offended to see his favourite Family thus reduc'd to one original Species, and to the Condition of a Cowslip; but in the Eye of Science, all will be found just. The Colour of the Flower, or Stateliness of Growth cannot distinguish Species; and, in declaring the two suppos'd distinct Kinds the same, and the Plant to have all the Characters of the *Primula*, LINNÆUS follows, with a just Precision, his own Method.

We have observ'd that the yellow Auricula is smaller; but no other Way, except in the Colour of the Flowers, different from this larger purple Kind.

The Root of this is a small brownish Head, hung every Way with innumerable Fibres, long, thick, firm, and whitish.

The Leaves rise first in a thick Tuft; and while young, they appear round, whitish, and hoary.

As they shoot out more fully, they grow narrow at the Base, and lose a great Part of that loose Cottony Matter which gave them the Appearance of Hoaryness.

Full grown, they are very broad, rounded toward the End, of a blueish green, firm, fleshy, and indented irregularly at the Edges: they keep the whitish hoary Aspect on their under Surface; and the indented Rib along the Middle forms a long Channel on their Surface.

The Stalk is round, naked, perfectly erect, firm, thick, and five Inches high. Its Colour is a pale green, often ting'd with redish, and it is a little hoary.

The Flowers are large, beautiful, numerous, and regularly dispos'd: they are plac'd singly on long Footstalks, which rise together from one Point at the Head of the main Stalk; and some stand erect, while others throw themselves a little sideways: the Whole forming a large Cluster in an agreeable Disposition.

Their Colour is a deep but glowing purple, and the Eye is yellow.

Let the Botanist now examine the Construction of the several Parts, and the same Research which shews the Class to which the Plants belongs, will also shew the Characters to be the same with those of the *Primula*.

At the Top of the main Stalk, where the separate Pedicles of the Flowers are inserted, there is a kind of general Cup or Involucrum, form'd of several little Leaves. Each Flower has, beside this, its particular and proper Cup: this is form'd of a single Piece, and is tubular, rais'd by five Ridges along the Sides, and indented in five Places at the Rim.

The Body of the Flower is one Petal, tubular at the Base, and divided in the Edge into five Segments; these are expanded and obtuse, and each has a heart-like Indenting at the Extremity.

At the Top of the tubular Part stand five Filaments, in a kind of rounded Neck: they are very short, but their Buttons render them conspicuous: these are pointed, plac'd erect, and convergent. A single delicate Style rises in the Midst, crown'd with a globular Top; and the round Rudiment from which it proceeds, ripens after the Flower is fallen, into an oblong Seed-vessel, in which are many small Seeds.

The Plant is thus found one of the *Pentandria Monogynia* of LINNÆUS; and by all these Marks a *Primula*, not a distinct Genus, nor demanding a separate Name.

Culture of this AURICULA.

It is a Native of the mountainous Parts of *Europe*, where it thrives best in a mellow Soil, and a South-East Exposure.

The



Proliferous Oxlip



Great double Cowslip



Great Violet Crocus



Austrian Dwarf Iris



Double Lemon Daffodill



Purple Auricula

April. The parted Roots will propagate it freely; and as the Soil is richer, and Weeds are clear'd away in Gardens, the Flowers will become larger this Way, and brighter.

Thus it will preserve itself in the original Form, and thus it should be kept in all good Gardens, to shew how Culture will by Degrees raise from it, as the original Stock, that infinite Variety.

These are to be obtained, by sowing the Seeds

of this wild Plant, and afterwards those of the best Flowers raised from it.

This we have treated of already, under general Heads, and shall in a succeeding Chapter, where we consider the best Flowers raised from it.

But in all these Sowings, some will rise plain, and they like the Parent Plant; and should not be destroyed.

April.

CHAP. II.

The Management of the Flower-Garden.

A Very elegant and essential Part of the Garden this Week demands Attention; that where the flowering Shrubs are planted with some Trees perhaps, and certainly with Roots of Flowers among them. These Shrubs will now be strong in Bud; and the first Shoots of the intermingled Flower-roots will be seen; the Ground therefore may have its last Cleaning, without Danger of destroying any Thing, and without disturbing the Flower-buds, or young Shoots and Leaves of the Shrubs.

Let the Gardener take for this Work, the Morning of a bright Day, after a slight Night's Frost. He will thus see every Shoot distinctly, and the Mould will be crumbly.

Let him clear away all Weeds, rake off all Rubbish, take away broken or stragling Branches; and break the whole Surface of the Ground, drawing up a little Mould about the Heads of the Plants, and round the Stems of the Shrubs.

The Advantages of this Practice, we have explained on former Occasions, and they will now be seen most plainly.

The returning Warmth of the Air, the Moisture of the Ground, and the vernal Strength of Nature encline all to growing strongly, and this will be encouraged by the Breaking of the Surface, and cutting off the extreme Fibres of the Roots.

A Thousand new Mouths will be not given by this to every Plant; the new broke Earth will allow free Passage to their tender Fibres; and Dews and Rains will be more perfectly blended with it, and better and longer detained among

it, than if they had fallen upon a more hardened Surface.

We directed last Week, new Hot-beds for the tender Annuals, Amaranths, China Asters, and the like; these will have now acquired a due Heat, and the Plants must be removed into them.

The Evening of a mild, cloudy Day, is as advantageous for this Purpose, as for the transplanting in open Ground.

Let Lines be drawn lengthwise, and across the Mould upon these new Hot-beds, at Distances proportioned to the Bigness of the Plants; and let them be carefully set in.

From this Time, they must have shading and watering, till perfectly rooted; and then they must be by Degrees hardened to the Air.

Let the Gardener chuse the Evening of a dripping Day, and bring in this Week some of the flowering Shrubs, into Parts of the Garden where they are wanted.

The Cistus's and some of the Cytisus's, particularly the smaller, succeed perfectly well at this Season; and Phillereas, and some others may be also planted.

Let the Holes for these be large and well dug: the Roots taken out of the Ground without Injury, and spread carefully in the new Place, then snipped off at the extreme Ends of the Fibres: and the Mould thrown in: after this, let some thin Turf from a Common be laid round about the Stem, with the grassy Side downwards; and let the Waterings all run thro' that. The Shrubs will be thus secured from Accidents, and set on speedy Growth.



S E C T. II.

The Management of the SEMINARY, for this Week.

THIS will be a proper Time for sowing many of the *American* Trees, and let the Gardener prepare different Beds accordingly.

Let him dig up the Ground on each very well, and to a full Spade depth; and having levelled the Surface, scatter or plant the Seeds according to their several Kinds and Size.

The Lazarole, the Cock-spur Thorn, and many other of the *Mespilus* Kind, may now be sown: also the Tulip-Tree, the *American* Cypress, the *Perfimone*, and *Virginia* Walnuts.

The particular Rule for each Kind, we shall give in their Places, treating of the several Trees: here we are only to name the Work, and give the general Cautions.

Some Bushes should be scattered over the Ground, and Traps set about well baited for Vermin. Birds should not be suffered to haunt the Beds; and when the Mould grows dry, it should at Times be refreshed by Waterings.

I have found this strewing Bushes over the Beds, to answer many Purposes: beside the first Intention of Defence. It in some Degree mellows the Ground, and keeps off the scorching Sun-Beams; and if a few of the outer Twigs be limed, the Mischief from Birds will be very much prevented.

As the Danger of severe Nights and desperate easterly Blasts, is now in a great Measure over, the Gardener may get to work upon the removing his exotick Trees.

Let him chuse a Season where there is a Prospect of Rain, a damp Air, and a southerly Wind; and let him begin with the hardier Kinds.

There is a great Advantage in getting them into the Ground in Time, but the Care must be not to subject them to too much Damage, in this endeavour after this Benefit.

Let the Earth be well opened, and the Mould broke to receive them, and let the Roots be carefully spread and covered: after this, let the Surface of the Ground, about and between them, be defended by some light Covering.

If easterly Winds come on unexpectedly upon this Plantation, let a Reed-hedge be placed to defend it; and if the Expectation of Rain have proved fruitless, let the whole Plantation be carefully watered every other Day.

This Care taken of those somewhat hardier Kinds, which it was proper to plant first, let the most tender be kept in their Places, till the Weather is more favourable for removing them.

The Grafting of Hollies is another Business very proper for this Week, but it must be done with all possible Care.

The common plain *English* Holly is the Stock on which all the painted and variegated Kinds are to be grafted: and they are best suited to this Purpose at about five Years Growth in the Seed-Bed: and two after their first transplanting.

The thick and sluggish Juices of the Holly make the Seed shoot slowly; and the young Trees grow also slowly.

If the Berries of the Holly be put into the Ground, when fresh gathered up from the Tree, they lie two Seasons.

The common Custom is to keep them in dry Sand a Year, and then sow them in Autumn: but a small Piece of Ground serves for a Seed Bed, and I have found by many Years Experience, that the best Way is to sow the Berries as soon as gathered; more Trees are raised, and they are stronger. This is Nature's Method; and in the Pride of leaving her Course we commonly err.

When the young Plants have stood three Years, and have been two Years in the transplanted Beds, there requires no more Care than to get good Cuttings fresh, and in Order, and to perform the common Operation of Grafting, with due Care.

Let the Gardener now look over his Seed-Beds of the last Year, for the first Shoots of many of the Shrubs and Trees will appear.

He must cherish these, by drawing a little Mould about them, by clearing away Weeds, by gentle Waterings; and where they are of the tenderer Kinds, if the Nights prove severe, by some Defence or Covering.

This must be done with great Care; else in the preserving them from the present Accident, they will be liable to many more, by being made too tender.

The best Way is, by a Frame of very high Hoops, and a Covering of Canvas, which must be taken off in the Morning, and all Air admitted; except the most severe.

If the Beds, where these are sown, be open to the East; and sharp Winds blow from the Quarter at this Season, a Reed-hedge must be placed for the Defence of the young Plants.

They will very soon be out of Danger, for they are gathering Strength; and the Severity of Frosts and Winds is going off; but if neglected now, all the former Care is fruitless.

April.]

April.

S E C T. III.

POMONA, or the FRUIT-GARDEN.

THE Business of one Quarter of the Ground is in many Cases to be continued in another, for Nature is the same in all Things: thus what we directed to be done to the Hollies in the Nursery, may be continued to the Fruit Trees of several Kinds; whether they be raised in a separate Part of the Ground under that Name, or where they are to stand.

This latter Method, tho' tedious, has Advantages.

In either Case, the Method of Grafting must be the same as we have directed already.

The Time of transplanting Fruit-Trees is fully come, and we have directed it to be done, in Regard of many Kinds: the Plantation must be now finished, or particular Cautions taken in the Delay.

It is not that the Trees will not take Root in the several succeeding Weeks, but they will be too forward in their original Ground.

The proper Period of Plantation, in this Instance is before their Shooting; and if the Places where they are to stand, are not prepared to receive them, the Trees must nevertheless be taken up, and laid in the Ground to be ready.

The Method is, to open a Hole, large and deep enough, and pruning the Roots, to lay them in Sideways in a slanting Direction: their Stems must be also covered with dry Straw.

They will thus continue ready for planting; and when the Holes are opened, their extreme Roots must be trimmed again, and the Mould well mixed among them. They will shoot very freely, and scarce any Time or Advantage will be lost by the Delay.

Finally, if there be any Article left unfinished in the Pruning, let it now be completed, for there will be no meddling in that Way afterwards.

The Fig-Trees which we have directed to be preserved against the Frosts of Winter, will now begin to bud, and they must be watched; for the earlier improper Shoots are displayed the better.

These Trees will, after the Management we have directed, be now preparing their Buds for shooting; and of these the fore-right and ill-placed must be rubbed away as they appear.

The training and Management of the Tree is also now to be considered; which, to be understood distinctly, we shall trace from the Original.

The new planted Fig-tree has its three Branches, or its three Buds, for shooting out such Branches, which rise in an oblique Direction. In the due Course of Management, the fore-right and ill-placed Buds being rubbed off, each of these three Branches in another Year is again parted into

three; one side Shoot being each Way produced, and suffered to remain: These are strong and well supplied, because the displacing of the other Buds, gives these all the Nourishment.

After this the great Care is to encourage them to a due Length, and to lay them in a proper Direction.

They are to be carried each Way from the main Stem, in nearly an horizontal Direction; but he would be very rash who should lay them into that Form at first.

We have observed before, that the Course of Nature is to shoot upright, or at the least oblique in the Branches; that so long as they remain in this Direction, they will continue growing in Length, but they will grow very little afterwards at the Ends, when once laid flat and horizontal. On this depends entirely the present Consideration of training the Tree.

Let the Gardener consider what Extent of Wall he intends to cover with his young Fig-tree, when it shall have arrived at its due Growth. This being mark'd upon the Wall by a strong Line, let him permit these two side Shoots to grow in an oblique ascending Direction, till they will reach within eight Inches of the Mark each Way, when laid flat. Then is the Time to lay them horizontally. Let them be brought down very nearly to the Level of the Bud, and thus nailed carefully without bruising. They will now encrease very little, and that very slowly in Length; but the same Juices that should have lengthened the Branch, will send up new Shoots from its upper Side, nearly in an erect Posture. These are to be the bearing Branches; and this Position is to be favoured: as many are to be left on as will cover the Wall, and by a careful nailing, they will be kept easily in their upright Growth, and at due Distance.

This is to be the Management of the two side Branches; and the middle Shoot, or main Stem, will furnish a new Provision of Branches at a proper Place.

When this has reached the due Height of the upright Shoots from the first laid Horizontals, it must be suffered to send out two side Branches, as the young Tree did at first; and these, when they have acquired a due Length in their natural oblique Direction, must be reduced to Form, as the others. This is the general System of Management of the Tree.

It is a Practice with many to take off the Ends of the healthy Shoots in Spring: and some who value themselves upon the Management of this Tree, declare for ending of the young Shoots in June: The Intention of this is to procure bearing Wood for the succeeding Seasons; but that is better done

April. done by encouraging the Buds of the horizontal Branches. If none appear where they are wanted, I have found the cutting a small Slit cross-ways into the Bark, always produces them.

When the young Shoots are at moderate Distance, they will produce nearly as many Figs as Leaves. When the Figs toward the upper Ends of the Branches are but just appearing, the Leaves on the lower Parts will fall off, and the

next Spring shews Fruit in the Places whence the Leaves fell. April.

These, and those which were so small in Autumn, ripen favourably the next Summer. Such as were larger at that Time, generally perish by the Frosts. This gives the Rule of Pruning, and may tend to explain the Method of Fructification in the Fig-tree; not so well understood at this Time as some may imagine.



SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

WHATEVER Cauliflower Plants are now remaining in the Winter-beds, must be planted out; and for this Purpose the Ground should be well broke; a little well-rotted Dung from an old Melon-bed dug in, and all Care taken of the Plants, that they may root quickly, and not feel too much the Check of this Removal. The Earth must be drawn up to their Stems; and they must have frequent Waterings, unless Showers render it unnecessary.

A small Crop of Carrots may now be properly sown upon a Piece of rich, free, and perfectly loose Soil. They will grow quickly to a Size, and be very delicate.

Onions should be again sown; and some of the Kitchen Garden Plants of slighter Service, Burnet, Chervil, Bugloss and Borage.

Sow Marygolds and Spinach at the End of this Week, and at the same Time *French Sorrel*.

Plant Winter Savory, and other of the hardier Kinds that grow from Slips; allowing them some rich Pieces of the Ground under Shade and Shelter. They must be watered till they have taken Root; and when they are strong, and have made some Shoots, they must be removed with Balls of Earth into their Places.

Sage and Rosemary, Hyssop, and most of the aromatic Plants, may be treated in the same Manner.

Many of these may be conveniently raised also from Seeds; but this is the shorter Method; and there are some that must be planted this Way, their Roots striking freely, and their Seeds seldom ripening. Mint, Baum and Penny-royal are of

this Kind, and these, as they root freely, and spread quickly, should be put in where they are to remain: The Soil should be moist and rich.

Plant out Lettuces which were sown in Autumn, and have lived thro' the Winter in warm Borders: Give them a free Soil, and a good Exposure: Water them often, and see for Slugs in Mornings and Evenings: They will be else devoured before they are rooted.

This Week is very proper for the planting of new Asparagus Beds; for the Roots are now just shooting, and they never strike so freely, or take so kindly, as when planted at that Period.

The Beds must be very carefully prepared for them, and the Planting must be attended to in a due Manner, not slighted, as is too customary.

They must have little Water for the first Weeks afterwards; but when the Buds are form'd in the new Ground, they should have somewhat more.

Let all the young Crops of all Kinds that are now sprouting from the Spring sowing, be kept very free from Weeds. These must be taken up by Hand, among the smaller Kinds; but where the Plants are larger, and they are to stand more distant, the Hoe will save a great deal of that Labour.

Dig up a Bed of rich Earth, and sow Purslain. It must be well watched when the Plants first appear, for a little Neglect will destroy it all. The Slugs are very fond of its first Leaves; and a little Sun, if watering be neglected, will burn them up, till they are better rooted.

The large Pease should now also be sown for a full Crop.

EDEN:

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R XXXI.

For the Middle of *A P R I L*.

S E C T I O N I.

F L O R A, or the P L E A S U R E - G A R D E N.

C H A P. I.

Flowers and curious Plants now in their Perfection.

I. The EMBROIDERED TULIP.

April. **W**E have already said so much of the
Pl. 31. Tulip Kind, that our Student will be
Fig. 1. in no Danger of ranking every Variety
as a Species.

The Creatures of the Gardener's Art are in no Flower more numerous : but the original Plants from which they are rais'd are few. Those which flower early have their Value thence; even tho' there were little of the general gaudy Colouring to recommend them ; but this has more than such Claim, to the Regard of the Florist.

The early Tulips in general are short in the Stalk, and have the Flower small : this, though it does not equal many of the later Kinds in those Respects, is of a middle Character in both ; as much above many of the early Tulips, as below some of the later ; and its Flower has a very bold and lively Colouring.

We have spoken of the indeterminate Nature of the Gardeners Names for Tulips ; they are indeed worth little Notice ; the Peculiarity of this is well express'd by the Term *Embroidered*, the second Colour being so laid on in that Manner, that the most vulgar Eye will see the Propriety of the Expression.

The earlier Writers have call'd it *Tulipa pumila*, and *Tulipa bicolor* ; the low Tulip, and the two-
Numb. XXXI.

colour'd Tulip : but these cease to be Distinctions, now the Varieties are so multiply'd.

LINNÆUS refers it to his second Species under this Head, *Tulipa scapo triphylo foliis ovato-lanceolatis* : Tulip, with oval lanceolate Leaves, three on a Stalk.

This last Character however is uncertain : he has retrench'd it from the specific Name in his latest Works, and adds in its Place, *flore erecto*, with an upright Flower ; the Flower of the wild yellow *European* Tulip drooping.

The Root is bulbous, short, fleshy, and swelling out at the Bottom. The Colour is brown, and the outside Skin is often woolly. The Substance of the Root is firm, white, and juicy ; and from its Base run a few slender Fibres.

The Leaves are long, but they have a considerable Breadth, and are sharp-pointed : they are fleshy and of a fresh green, with a light Tinge of blueish.

The Stalk is fourteen Inches high, round, tolerably upright, and a little downy : its Colour is a pale green, and it is usually streak'd with red. There are usually three Leaves on it, but this is not certain : they are of the same Shape with those from the Root, and are covered with a greyish Dust.

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April. One Flower terminates the Stalk, and it is a very fine one; the Ground Colour is yellow, and on this is laid a vast deal of Crimson: this is not thrown in Blotches, as in many Kinds, but spread out naturally in a kind of Rays, as if laid on by Art; the Work of a Needle.

Thus much is certain and invariable in this Tulip, but a great deal of accidental Change is seen in it. The yellow is sometimes as pale as Lemon-Peel, sometimes perfect gold; and tho' the Red has always the same Crimson Tinct, it varies in Degree from very pale to very deep.

Hence arise those numerous feminal Variations of this Plant, which is itself no more than a Variety from the original Species we have just nam'd; yet these are all distinguish'd by Gardeners Names, the Titles of their Masters, or the coarse Rovings of their Fancy.

As the Colouring in this Flower is very fine, Nature has shewn it also to great Advantage, and in a very agreeable Succession. The Cold of the Season, in which the Flower first makes its Appearance, prevents it from opening in haste, or soon losing its Beauty.

The Colours first shew themselves on the Outside of the unopen'd Flower, and are faint in this Appearance; by Degrees they glow with much more Life and Spirit; and when we have many Days admir'd them in this State, the Petals separate: we see into the Flower; and we think lightly of the outside Streaks and Blushes, from Comparison with the embroidered Tincts within.

It opens slowly, and the Colours glow more intensely as the Flower admits the Sun and Air: at length the Petals spread themselves wide asunder, and for a Week longer we have the full Display of the highest Colouring. After this, the Shades and Lights lose themselves; the Colours grow faint; and the Flower soon after fades. Its Duration is very considerable; I have seen it in the several Stages of Beauty, a Month.

The Characters of the Tulip we have had Occasion to name already; and they are in no Species or Variety more obvious or distinct than in this. Six very long and large Buttons shew themselves in the Centre, and refer the Plant to the *Hexandria*; and in the Midst of them appears a large three parted Stigma, or Head, which being single in the Body, and fix'd upon a single Rudiment of a Seed-vessel, declares it one of the *Monogynia*.

April. The Filaments are short, though the Buttons large; and this Stigma has no Style: but we have told the Student, that these terminating Parts are to be counted, and the Buttons and the Stigma remark'd for Characters, when those slender Parts which naturally support them, are deficient or inconspicuous.

The rest of the Tulip Character consists in the Flower having six Petals, and no Cup, and the Seed-vessel being three-square, long, and divided into three Cells, with flat Seeds, separated by chaffy Fragments in a double Row.

Culture of this TULIP.

The Management of this Tulip must be the same in general with that of the other earlier Kinds of which we have spoken; and it will be explain'd more at large in a succeeding Number devoted to the Tulip Kind.

What is particularly to be regarded in the Culture of this elegant Flower, must be to give it a Situation where it is defended from the rough Winds, but has not too much Sun; in this we consult the long Duration of the Flowers; for the Sun makes them fade.

The Gardener needs not to fear its suffering for want of the genial Influence of that common Parent of Flowers; for Experience in our own Gardens, and elsewhere, what we have seen, and what we read, jointly declare that it defies the Cold.

I have try'd the Experiment between a warmer and a more shady Bed; and have found the Flowers, where there was more Sun, faded ten Days sooner than those in the Shade; and that the Colouring was better in Proportion as there came less full Sun upon the Bed.

In the more Northern Parts of *Europe* no Species flowers so well. There is a great Variety of this Kind in *Russia*; and the Multitude of fine Tulips in the common Gardens of *Denmark*, are principally from this Stock. These were the Tulips mention'd by Mr. HENSHAW, in his Observations on *Denmark*, which the Public owes to Dr. BIRCH, more faithful than nice in his Collections *.

* *Hist. of Royal Society.*

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2. CRIMSON DAPHNE, called MEZEREON.

Pl. 31. We give the Gardener's Name, that he may
Fig. 2. know we mean the elegant and spicy Shrub with which he is so well acquainted; but we remind him first of its fitter Title.

The Name *Mezereon* is given only this Species and its slight Varieties; and it would thence seem, if left unexplain'd, that there was no other ally'd to it in Genus; but later Researches shew they are many.

The *Mezereon*, held distinct by less accurate Writers, is now known to be of the same Genus with the *Laureola* and *Thymelæa*: LINNÆUS therefore has connected it with them under one common Head; and taught those who would speak with Accuracy, to call it *Daphne*.

The earlier Writers were acquainted with it; for its glowing Colour, and its early Flowering, its Profusion of Bloom and spicy Sweetness could not be overlook'd by any who cast the most slight Glance upon this Part of Nature.

They have call'd it *Laureola folio deciduo*, and *Laureola femina*: Female Spurge Laurel, and Spurge Laurel with deciduous Leaves; also *Chamelæa Germanica*, and *Mezereon Germanicum*.

Our Gardeners know it by the Name *Mezereon*, adding Distinctions according to the Colours of the Flowers and Berries; for there is in this light Matter great Variation.

LINNÆUS adds to the Generical Name, *Daphne*, *floribus sessilibus ternis caulinis, foliis lanceolatis deciduis*: *Daphne*, with Flowers plac'd three together, without Footstalks on the Branches, and with spear-pointed deciduous Leaves. A Name conveying a Description.

It is a small Shrub of wild Growth, but of consummate Beauty: the Height is three or four Foot; and the Gardener's Care should be employ'd to make it send it out numerous Branches, which, as they naturally stand oblique and pointing upwards, will make that Way a most agreeable Figure. This is worth Consideration; for the Flowers, covering the Branches in this Shrub, not hanging from them as in most others, will be vastly more conspicuous as those Branches are better train'd.

The Roots are long, slender, whitish, and tough.

The Bark of the main Stem is brown, irregular, and rough: that on the Branches is paler, and has a Tinge of greyish; but it is not less uneven on the Surface, naturally rising in little Lumps.

The Wood is white, and the under Bark is green; and there is a cottony Matter among its Foldings.

The Flowers appear early, and the Leaves come forth afterwards. The State of greatest Beauty is when the Flowers alone appear: they, in this Case, surround the Stalk regularly, and cover it in all Parts for a considerable Length; but the Leaves do not begin to shew themselves till some of these are fallen.

The Flowers are not very large, but their Number and Lustre render them conspicuous. Their Colour is naturally a very elegant Crimson, darker on the Outside than within, and there palest toward the Centre; where, in a little roundish Opening, stands an irregular Knob of gold Colour, with a slight Tinge of Orange. This is form'd of the Buttons, whose Number we shall examine presently, with the particular Form of the Flowers: here we describe the Cluster.

This Spike is five, six, or more Inches in Length, and an Inch in Diameter; so thick cluster'd with Flowers, that it appears one Body when seen from any little Distance.

This is its most perfect Condition; and in this State, when in full Flower, the Scent is in the highest Degree agreeable. It has the Perfume of the *Syringa*; with the spicy Fragrance of the Clove.

At Evening the Scent is freshest of all; and when, in my own Garden, I have kept a double Row of these Shrubs, manag'd as I shall here direct, and have walk'd among them in a mild Day at Sun-set, the Air, fill'd with their Exhalations, has reminded me of the spicy Gales of *Arabia*, which Sailors say they perceive as they approach that Coast.

Variety of Colour pleases, in our Gardens, even where the Change is for the worse: we therefore nurse with Care the pale red-flower'd *Mezereon* and the white, succeeded by yellowish Berries. These have less Fragrance as well as less Beauty; nor is the strip'd-leav'd Kind worth Notice, for the Flowers are the Perfection of this Plant; and no Leaves appear with them while they retain full Glory.

As the Flowers decay, the Leaves burst forth from the Tops of the Branches; and, in some Parts from the Sides, they rise in Clusters from the same Knot: they are oblong, pointed, undivided at the Edges, soft to the Touch, and of a very beautiful green.

The Situation of the Flowers has some Singularity: they rise from a kind of Buds or little Swellings, which stand at very small Distances all round the upper Part of the Branches.

Three Flowers naturally rise from each Bud; but this is not invariable: I have found only one from some, and from others four or even more.

They have no Footstalks; but the Base of each is plac'd immediately upon the Bark of the Branch, defended by the little scaly Films of the Bud, which in some Measure, tho' irregularly surrounding and defending the Flower in that Part, have the Aspect of a Cup. The Scales are brown and oval, and the Substance of the Bud is green between them.

The Flower therefore has properly no Cup; it is form'd of a single Petal, whose lower Part is a Tube of a cylindric Form, and imperforated at the Base: the upper Part is compos'd of four large

April. large oval Segments, which are wide expanded, and in the Hollow at their Centre stands the golden Head, form'd of the Buttons of four Filaments, which reach up to the Top of the tubular Part: a little lower, within the Tube, are seen four others, plac'd between the Filaments, supporting these; so that the whole Number is eight: they are all inserted into the Sides of the Tube; and in their Midst appears a single Stigma, or rounded Head, placed, without any intermediate Style, upon an oval Rudiment; which afterwards ripens into a roundish Berry, with one Seed.

The eight Filaments (for LINNÆUS does not regard their Difference in Height) place this among the *Oftandria*, in the Eighth Class; and the single Stigma shews it one of the *Monogynia*.

Culture of the CRIMSON DAPHNE.

The Shrub is Native of *Europe*, even of the Northern Kingdoms, but we have it not wild in *England*. *Germany* abounds with it in Forests on the Sides of Hills, where there is a deep Soil, Shade from the Noon Sun, and sufficient Moisture.

This must be the Gardener's Rule for cultivating it here.

Let him chuse a Spot in the Garden where the Ground is rising, open to the South-East, and where there is Shade against the full South Sun.

Here let him dig out the Mould, and throw into its Place the following Compost:

Mix two Barrows of rich Garden-Mould with one Barrow of Earth from a loamy Pasture; and add a Bushel of rotted Cow-dung, and half a Peck of Soot.

When these have been well mix'd and expos'd to the Weather four or five Months, let the Place be fill'd up with them, and the Surface rak'd even.

Let the Gardener mark some strong and healthy Shrub of the *Mezerion* that bears long Spikes of Flowers, and those of a strong Crimson.

Let him preserve the Berries, which follow these, from Accidents; and when they will freely quit the Stalk, take them off. Let him carefully rub out the Seeds, and spread them thin upon a paper'd Shelf. Let them lie there ten Days to harden, and then scatter them thinly over the Bed.

The Berries will ripen in *July*, therefore this Sowing will be early in *August*. Let a Quarter of an Inch of common Garden Mould be sifted over them; and, strewing on a few Pieces of Hawthorn Bushes, leave all to Nature. In Spring the young Plants will appear, and there will be Abundance of Weeds among them.

The Bushes must be taken off, the Weeds carefully pick'd out by Hand; and, when the young Plants stand too thick, the weakest of them must be pull'd up, and the rest left at eight Inches Distance.

The Ground being loosen'd by taking up the Weeds, a gentle Watering will penetrate very freely: this must be given in the Morning, two Hours after Sun-rise, and repeated occasionally.

They will now require only the common Care of being kept clear from Weeds, and now and then water'd. They will thus take their Growth naturally and freely; and here the finest are to be left to flower. The weaker Shrubs must be taken up the second Year; and those intended to remain must be left at four Foot Distance.

3. YELLOW PAINTED IRIS.

Pl. 31. The *Iris's* are a vast Store of Beauty and Variety for the Gardener; and this is one of the most pleasing. The Varieties rais'd by Seed have been too freely admitted to swell the Account of Species, but this is not one of that Number: it is truly distinct, and it was early known to be so.

Fig. 3. The old Writers call'd it *Iris tenuifolia versicolor*; and *Iris angustifolia minor*.

LINNÆUS, in the Place of these indeterminate Names, has given it one expressive of the Characters by which it is distinguish'd from all the other *Iris's*, and therefore worthy to be preserv'd for ever: this is *Iris corollis imberbibus, germinibus trigonis, caule tereti, foliis linearibus*: Round-stalk'd *Iris*, with narrow equal Leaves and beardless Flowers, with three-corner'd Rudiments.

It is an upright specious Plant; and even in the plain Colouring given it by Nature, would be call'd handsome; but under the Accession

of new Dyes from Culture, very few excel it.

The Root is irregular and spreading, blackish, juicy, knob'd, and full of long tough Fibres.

The Leaves are long, narrow, and of a pale green, with some little Tinge of greyish.

The Stalk is round, upright, firm, not very thick, of a whitish green, and toward the Top palest. The Leaves on this are few, of a greyish green, pointed at the End, and of a firm Substance.

The Top of the Stalk is cover'd with three, four, or more Flowers, which open in Succession, and have a great deal of Elegance.

They consist, as those of the other *Iris's*, each of six Petals, three of which turn down, and three stand upward. In the State of Nature, the three Petals which turn down are yellow, vein'd a little with purple; and the three which stand upright, much more deeply clouded with that

April. that Colour; but in Gardens, the Variety of Colouring is endless.

In the most perfect and elegant State, the three Petals which fall down, are of a fine yellow, tho' not without some Tinge of brown, and they are veined with the most glowing violet purple: the three upper Ones have the same ground Colour, but they are clouded and painted with a more lively purple; in a wild and pleasing Irregularity.

Nature sports and wantons without Bounds, in the Disposition of these Colours: and there are three other broad Parts, resembling smaller Petals in this Flower; which tho' naturally pale, will receive also from Culture various Degrees of Colouring.

To explain these, we need refer only to the Characters of the Iris Flower, laid down in a preceding Number: this Species shews the same.

In the Place of a Cup, there are a few vague and light Films: the six Petals, various in Form and Disposition, are united at their Bases: the Filaments are three, and they lie upon the Petals, which turn down; and from the Rudiment, which stands below the Receptacle of the Flower, rises a single, and very short Style, crowned with a vast Stigma, divided into three broad Parts; these are the Bastard Petals of which we are treating.

April. The Class of the Plant is obvious in this Examination: the three Filaments refer it to the *Triandria*, the Third in the LINNÆAN Sytem, and its single Style shews it one of the *Monogynia*.

Culture of this IRIS.

The common Way of propagating this Plant, is by parting the Roots; but the Gardener who values himself upon his Art, should always raise it from Seeds. The Method we shall lay down at large in a succeeding Number.

The Time for parting the Roots, is when the Leaves begin to change Colour, which is usually in *August*.

The Pieces should not be too small; and they should be planted in a shady Border, at two Feet and a half Distance, and watered often.

The Bed should be shaded from the Noon-day Sun, but open to the East, that it may have its Influence in the Morning, and the best Soil is an equal Mixture of rich meadow Earth, and Pond-Mud.

We shall in a succeeding Chapter lay before the Reader many other beautiful Flowers of the Iris Kind; and take that Occasion of delivering the Method of managing them from Seed together.

4. DUSKY FRITILLARY.

Pl. 31. We shall have Occasion to explain hereafter, many of the Fritillaries to the curious Reader, but this for its peculiar Aspect, and early Flowering, demands a separate Notice. Tho' far from the most elegant of the Kind, it is to the attentive Eye, full of a singular Beauty; and it preserves this longer, than most of the more specious Flowers.

Fig. 4. It is one of the many Varieties we see from the common Fritillary Stock, and to that original Species, the Student is to refer it.

The Authors who have considered it as a distinct Species, have called it *Fritillaria flore ex rubro purpureo*, and *Fritillaria purpureo fusca*. LINNÆUS characterises the Species to which it belongs, by the Name *Fritillaria foliis omnibus alternis*; distinguishing it by this Name, Fritillary, with all the Leaves placed alternately, from the small flower'd *Pyrenæan* Kind, in which the lower Ones stand in Pairs: the Varieties from this latter Species are singular, tho' few; those from the other, which C. BAUHINE calls, *Fritillaria præcox purpurea variegata*, are almost innumerable, when produced from Seeds.

Some Plants of this dusky Kind usually rise among them, and they should be separated and preserved with Care. The Plant in this Condition, makes but a poor Appearance among the gaudy Colours of the more usual Varieties; but in some

Nº. 31.

other Place, it will be considered more according to its Worth.

The Root is a solid Bulb, divided into two Parts, whitish and juicy; and furnished with a few white Fibres.

The Stalk is round, upright, firm, and ten Inches high; toward the Bottom, it is purplish, upwards, of a pale green; but often stained a little with red, at the Insertions of the Leaves. The Top droops with the Weight of the Flower.

The Leaves are usually four: They stand at two Inches distance, and they are narrow, of a dead green, not very long, pointed at the End, and hollow'd.

The Flower, whose Weight bends down the Top of the Stalk, terminates it singly, and is of the Bigness of a small Tulip. The Ground Colour, is a deep, but dusky Purple; and on this are placed oblong and oblique Lines, of a yellowish green: they do not make the regular Chequer-work we see in many of the other Fritillaries, but their Form and Disposition is very pleasing.

There is at the Base of every Petal of the Flower, a greenish Tinge; and this is continued down its Length, in three or four faint Lines; these terminate the oblique and short Ones, which make the general Variegation; and when viewed near, they add not a little to its Lustre.

5 A

These

April. These Colours are most distinct on the Outside of the Flower, but they are brightest within, where the green is also less seen. This is the Colouring, and this it preserves without Variation.

The Construction of the Flower, is the same as in the other Fritillaries. It consists of six large Petals, and is of a Bell like Shape, with a broad Base.

These rise naked from the Stalk, as in the Tulip, without any Kind of Cup, and near the Base of each, within there is a small Hollow, containing a Honey-juice, the Nectarium of the Flower.

Of this Part, we have had frequent Occasion to speak in the preceding Pages: often it is plac'd singularly and strangely, as in the Passion-Flower, where it crowns the Whole, and in the Narcissus, where it is most conspicuous.

Here it is in its natural Condition, and thus we see it in the Lilly, and many other Plants, and in the Berbery Shrub.

It is an oblong hollow, and never is without its proper Content, a Drop of sweet Juice, which is indeed true Honey.

The Bees collect this, not make it, as the Vulgar have supposed; and Men of Curiosity have done the Office for them.

In the Center of the Flower rise six Filaments: they stand close about the Style, and they have large, oblong, and square Buttons.

The Style itself rises single, from a three corner'd Rudiment, and is slender and longer than

the Filaments; its Stigma, or Top, is divided into three Parts; and so is the succeeding Seed-Vessel, and on the Surface smooth.

The Characters of the Class are obvious; six Filaments and a single Style, shew the Plant of the *Hexandria Monogynia*; the sixth of the LINNEAN Classes, and the first Section.

Culture of this FRITILLARY.

We have observed this is no more than a seminal Variety of the common purple Fritillary; and that it rises among many others, when the Seeds are sown, for a Succession of new or fine Flowers.

This therefore is its original Production; and of this we shall treat at large, directing the Culture of the finer Varieties.

When the Plants of this Kind are separated from the rest of the Seedlings, they must be propagated farther by Off-sets from the Root.

These may be taken off once in three Years; and planted at eight Inches Distance, in fresh Beds; the larger will flower the first Year after the Removal; the others according to their Size, the second or the third.

They must be taken off from the old Roots, when the Leaves are decayed, and planted again immediately; as must also the old Roots, for it is very prejudicial to them, to lie out of the Ground. The Soil for this Kind should be two Thirds rich Garden Mould, and one Third pasture-Earth.

5. BLACK HELLEBORE.

Pl. 31. The Gardener knows, we hope, that this is a more
Fig. 5. proper Denomination of what he calls the *Christmas* Flower; a Name in some Seasons it not amiss deserves, tho' in others, 'twill be as late as this Time before it opens its vast Flower; whose Continuance has a Right to our Regard, as well as its Size: these, with the Time of its Flowering, give it a Claim in every curious Garden; which its hardy Nature, and its easy Culture very well support.

The earlier Writers were all acquainted with it. Indeed, a Plant so singular and conspicuous, a Native of almost every Part of Europe, and the East, and thrusting up its huge Flower through the Snow, could not have escaped Observation.

They have called it, *Helleborus niger*, *Helleborus legitimus*, *Helleborus flore roseo*; and hence our English Names of true Hellebore, Rose Hellebore, and the rest.

These Authors had the Accuracy to observe, that the Distinction in the Colour of the Flower was accidental, and to be considered only as a Variation of the same Plant.

JOHN BAUHINE names it thence, *flore albo*, *interdum etiam valde rubente*, with the Flower white,

and sometimes strongly ting'd with red; but we have seen it since distinguished as two Plants.

LINNÆUS gives its Characters in his specific Name; this in his *Cliffort* Garden is, *Helleborus scapo florifero sub-nudo petiolo communi bipartito*; Hellebore, with the Flower-stalk almost naked, and with the main Foot-Stalk of the Leaf divided into two Parts.

In his later Writings he has been more minute, but this is most expressive.

The Plant rises to no great Height from the Ground; but the Cluster of Leaves generally seen together, the Firmness of every Part, and the Bigness of the Flower always attract Attention.

The Root is composed of innumerable, thick, black Fibres, long, tough, and variously entangled; rising from a small Head, and spreading every Way to a vast Distance.

The Leaves are large and numerous, and are divided in that coarse fingered Method, which modern Botany calls *pedated*.

There cannot be a better Example, by which to explain that Term. When a Foot-stalk is single and undivided, and from its Extremity there

April. there rise numerous Leaves spread out in the Manner of Fingers, these are not considered as so many distinct Leaves, but as Parts of one; and the Whole is called *digitated*, or *finger'd*. These Parts are two, three, five, or any greater Number.

When the common Foot-stalk is split at the End, and the Leaves are fixed only to its inner Side, the Leaf is pedated.

This is a coarser Division, tho' of the finger'd Kind, and will be explained for ever to the Student, by our Figure.

The Foot-stalk of this divided Leaf is thick, short, and juicy, it usually rises slanting, and is of a fresh-green; when the Plant is in Perfection, it is stained with red, in various and irregular little Spots.

The Leaves placed on its divided Top, and forming what is called the entire pedated Leaf; are usually nine, they are oblong, broad, of a strong green, and of a very firm Substance, indented round the Edges on their extreme Part, but perfectly entire below; and often cut out into a small Point at the End.

The Divisions of the Foot-stalk at the End are always coloured, redish or brownish; and in the best Condition of the Plant, these and the main Rib on the Back of the Leaf are purple.

The Flowers appear among the Leaves, each on its separate Stalk, and these scarce longer than those of the Leaves: but the Size of the Flower renders it very conspicuous.

The Stalk is fleshy, round, of a pale green, and elegantly spotted with Crimson; it is rarely quite upright.

'Tis not the Weight of the Flower bends it, but Winds, and severe Seasons. There grows no proper Leaf upon this Stalk, but close under the Flower, there is a filmy Substance, and sometimes below this, another. They serve in some Degree, the Office of Defence to the young Flower. Nature has denied it a Cup, but these Films seem to have been given in its Place.

The Flower itself, is of the Bigness of a single Rose, expanded, white, or variously stain'd with Crimson.

Sometimes the white is perfect; sometimes the red is shewn throughout; but in the most elegant State, the two Colours are mixed, and as in the Apple Bloom, the red is principally on the Outside of the Flower.

In the Centre are numerous Filaments, supporting yellow Buttons, and from the Base rise up a Kind of Horns, which shew their curl'd Tops above the Cluster, and are of a pale green.

Round about the Filaments, are numerous open Cups, as it were, of a delicate strong green, tip'd with Gold.

This is the general Aspect of the Flower, and thus the curious, tho' uninform'd Eye, views it with Wonder. The Buttons cluster round the horned Rudiments on the Flowers first opening, and spread out far and wide, as it grows more accustomed to the Air; the Horns themselves, and most of all the hollow Bodies which surround the Filaments, call for Admiration.

They will be named strange and singular Parts, April. in those untaught the Lessons of this agreeable Science: but Philosophy admits no such vague Terms, as strange and singular Parts in this Matter. Every Thing is explained, every Part has its Name, and there is no Flower, where they are better displayed by Nature, or more open to the Eye of the Student.

To search the Class of the Plant, the young Botanist knows he is to examine these golden Buttons, to count them with their Filaments; and afterwards, to trace them to their Origin.

He begins their Account, and he soon finds them many more than the highest Number, from which a Class is characterised; this is twelve.

When he has counted so many, and sees a Number more, he knows the Plant is one either of the *Icosandria*, or of the *Polyandria*.

In each of those Classes the Filaments are numerous, but in the *Icosandria*, they rise from the Petals of the Flower, or from the Inside of the Cup; whereas, in the *Polyandria*, their Origin is from neither Flower nor Cup, but from the Receptacle.

This known, the Student is to trace these Filaments, whose Number declare the Plant to belong to one or other of those Classes.

There is no Cup, therefore they cannot be inserted there: to know whether the Petals give them Origin, let one be taken carefully off, it will come entire from the Top of the Stalk, where it is inserted under a small rounded Head; and one after another, they must be all taken thus away, with no Filament adhering to them.

Let these be counted; they will be found five; they compose the Body of the Flower; they are broad, hollow, striated; and each has a Spot of green at the Place of its Insertion.

These remain a long Time, and serve the Office of a Cup, defending the ripening Seed-Vessels.

From the Duration, and the Want of another Cup, they have by some been supposed only the colour'd Leaves of one, and the Plant has been declared to have no Petals: this is as contradictory to the Senses, as to Reason: the Eye declares this a Flower, not a Cup; tho' it performs the Office of one; and Nature shews it who has given those Films we named before, as its Support.

These Films rise from the outer Rind, or green Skin of the Stalk, as the Cups of Flowers naturally do; but the coloured Petals rise from the innermost Bark, which is filmy, white, and like them in its Nature.

Thus the Form, Colour, and Production of these Parts, shews them to be Petals, and to compose the Body of the Flower.

These separated and dispatched, our Student returns to the Filaments, his principal Object. These he can now see distinctly rise from a flat, rounded Body, conspicuous enough, tho' small, from whose under Part, rose also the Petals. This is the *Receptacle*.

He sees therefore, that the Receptacle is that Part, which serves as a Basis to the several Organs of Fructification; it is here single and proper, it

con-

April. connects all the Parts of one Fructification, and those of one only: in the composite Flowers it is otherwise. Having thus explain'd it in the plain and simple State, we shall refer hither when treating of it in the more complex Form.

To this plain Receptacle the Student follows down the Filaments of this Hellebore Flower; here he finds them all inserted; this he knows to be the Receptacle, and he is assur'd the Plant is of the *Polyandrous*, not of the *Icosandrous* Class.

We have never had so fair an Opportunity of explaining this before; therefore shall add, that in this Manner he is to trace the Filaments, when numerous, in all other Flowers, and thus to determine of them.

The *Polyandrous* Class is large, and the Plants refer'd to it by the Origination of their numerous Filaments, are subdivided, according to the Number of their Styles: the first Section comprehends those which have one Style only; the second, those which have two; the third, such as have three; the fourth, four; fifth, five; sixth, six; and the seventh such as have more than that Number.

Our Student counts those horned Tops which rise from the Rudiments, which he knows to be the Styles: he finds in this Flower eight of them; and he knows therefore the Plant is one of the *Polygynia*.

He has examin'd and he understands the Petals, Filaments, and Styles of this Flower, and he has found its Class; but there remain yet those singular hollow Bodies surrounding the Filaments. He knows that when he finds a Part in any Flower, distinct from Petals, Filaments, and Style, this is the Nectarium of that Flower.

The present Subject of Enquiry is such: each of these hollow Bodies is a Nectarium, and each is divided into two Lips; the outer one of which is large and hollow, the inner one small: their whole Number in the Flower is about thirteen, but this is not invariable. They surround, in a regular Circle, the Filaments and Rudiments of

the Seed-vessels, whence rise the Styles, and they are inserted with them on the Receptacle, not fix'd to the Petals. April.

Each has its short and very slender Footstalk: the Base fix'd immediately on this is roundish, thence the Nectarium rises tubular, and widens to the Top. The little Footstalk is whitish, the Body of the Nectarium is of a fine green, and the Tip of each Lip is yellow.

This is the perfect Structure of the Hellebore Flower, in which the Student will read distinctly this large Lesson of the Science. The Seed-vessels which follow are equal to the Styles in Number, and each contains numerous roundish Seeds, fix'd to the Suture of the two hollow'd Parts of the Capsule.

Culture of the BLACK HELLEBORE.

We have said the Plant is native of the colder Climates: it thrives best on a hilly Situation, where the Soil is firm and not too poor; and very little Trouble is requir'd in its Culture.

Let a Border be fix'd upon that which has the Morning Sun, but no more: let a Mixture of equal Parts, Pond-Mud and loamy Pasture-Earth, be put into this; and in the Beginning of *May*, when the Plant has ripen'd its Seeds, let the Roots be parted, and planted out at eighteen Inches Distance.

After this, they will only require to be kept free from Weeds and water'd at Times, and they will flower the succeeding Season.

The Propagation is so fast this Way, that there is no Need of raising the Plant from Seeds; nor is there any great Advantage in the Beauty of the Flower to be expected that Way; but if any desire to follow that Method, it is very easy: the Seeds should be sown, in the Beginning of *August*, in such a Soil and Situation as we have directed, and they will strike freely.

6. CRIMSON ERYTHRONIUM.

Pl. 31. The Garden, at this early Season, affords few
Fig. 6. Plants more elegant, or, for the Bigness, more conspicuous than this. Its Beauty and Singularity recommended it to early Notice among the Writers on Plants; and our first Histories that name *English* Gardens, speak of it as an establish'd Inhabitant: its easy Culture join'd with its early Beauty in recommending it to this universal Notice; but it was first known by a very inexpressive Name, *Dens Canis*, Dog's Tooth. Our Gardeners caught the Sense of this, and added the Name Violet, referring it to a Genus altogether distinct.

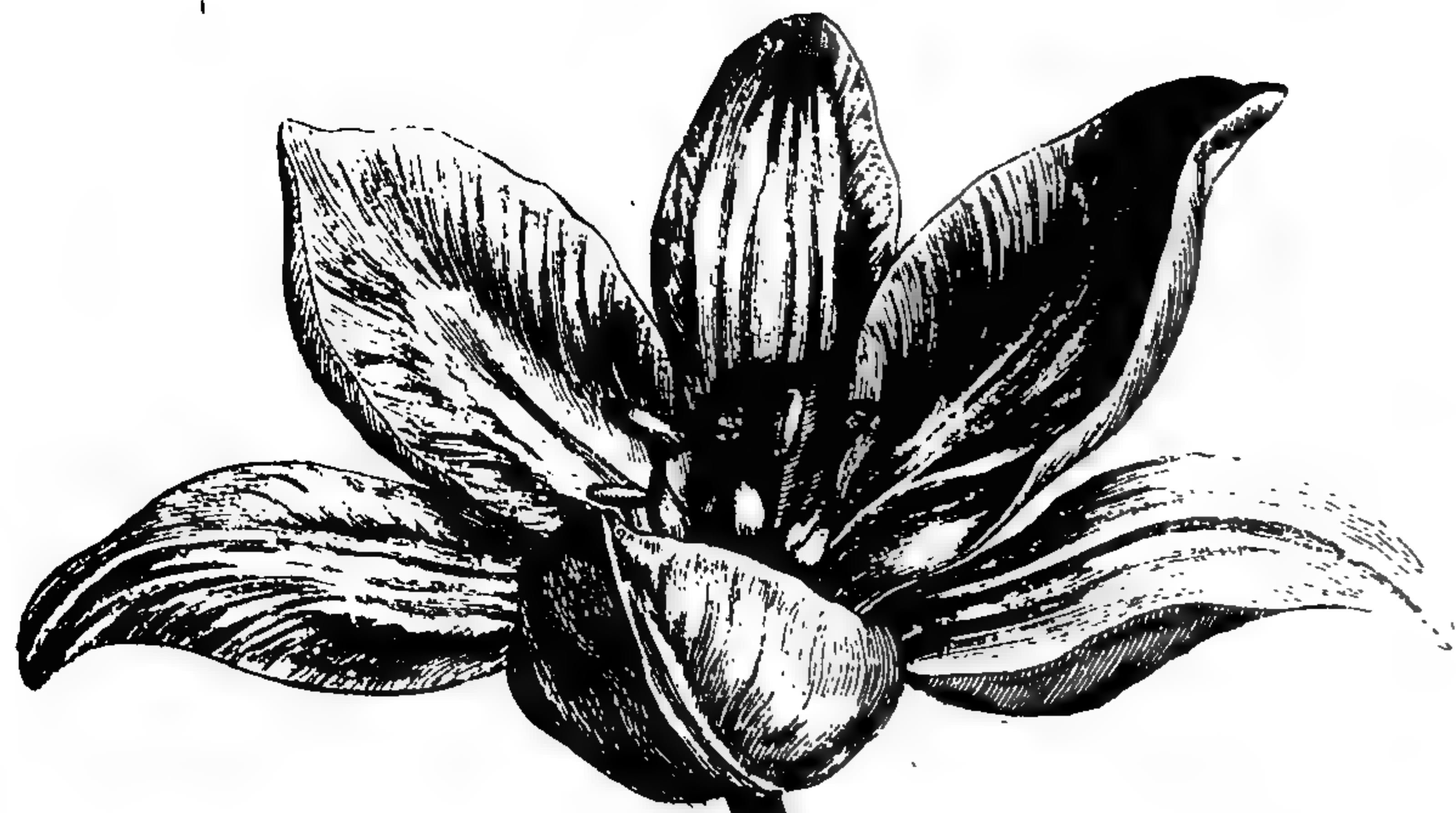
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it *Erythronium*, and all the late Writers follow him.

Those who caught every slight Distinction in Appearance, and were fond of raising thence new Species, have distinguish'd several Kinds of this; the longer and the rounder leav'd, the white flower'd, and the red; but later Botany, referring all these to the one original Kind, admits no Addition to the Name, but calls it simply *Erythronium*.

We have figur'd that Variety with Crimson Flowers, as best worthy the Gardeners Attention, and best answering the Name; but he who sows the Seeds of this, will have white Flowers among them.

The whole Plant is elegant, tho' small; the Leaves



The Embroidered Tulip



Yellow painted Iris



Crimson Daphne
callit. Mezereon



Crimson Erythronium



Black Hellebore



Dusky Fritillary

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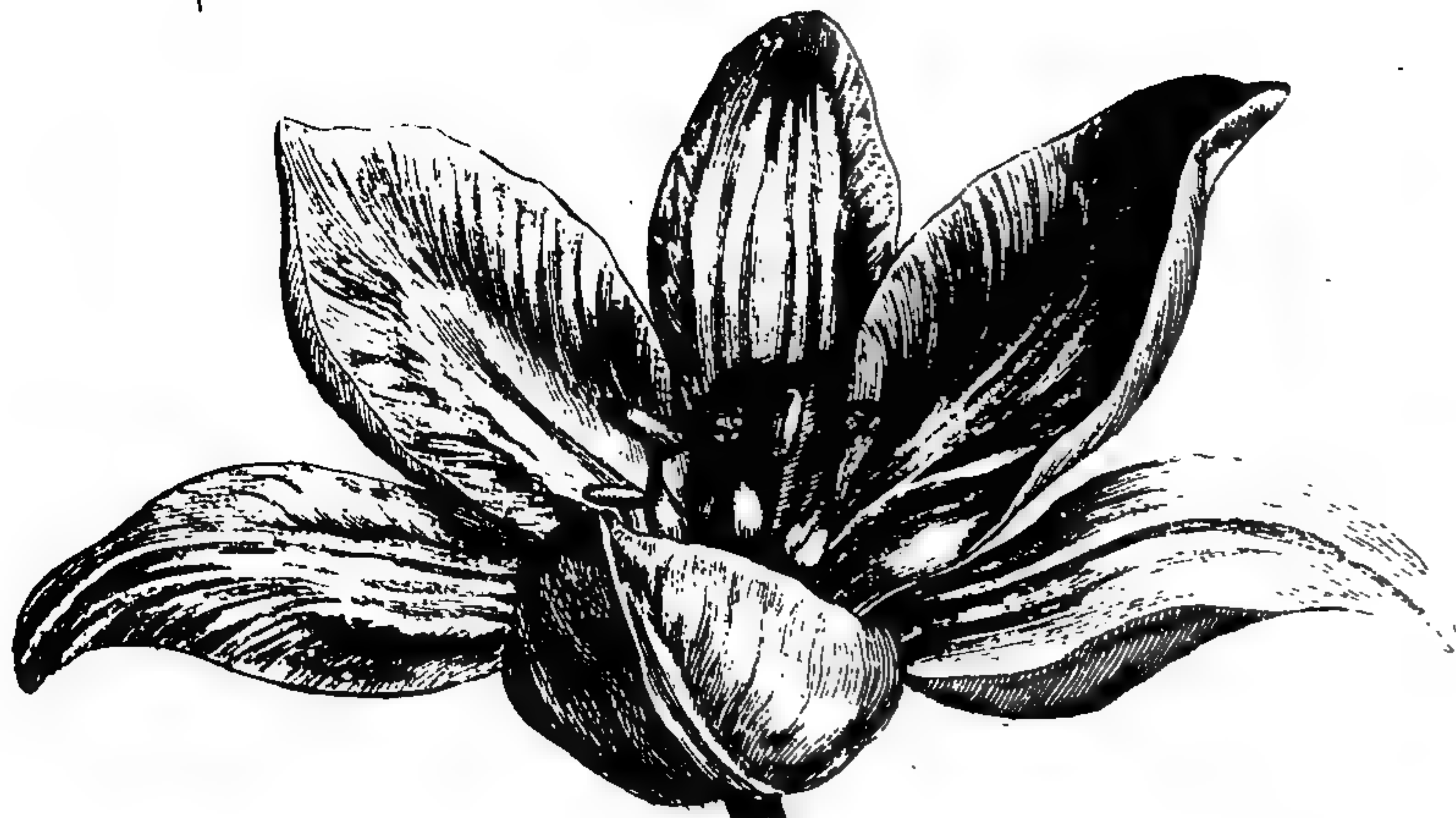
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The Embroidered Tulip



Yellow painted Iris



*Crimson Daphne,
call'd
Mezerion*



Crimson Erythronium



Black Hellebore



Dracopis Fritillary

April. Leaves and Stalk, as well as the Flower, singular and beautiful.

The Root is long and white: thick in the lower Part, and smaller upwards.

From this rise, early in Spring, two Leaves, and with them the Flower-stalk and the Bud: this is tender, and at its first Rise above the Surface, would be destroyed by the Frost and sharp Winds of the Season; but Nature has provided a Defence: it rises in the Midst of the two Leaves, and they close round about it; so that what appears is an oblong Mass, or great Bud, bursting from the Root. After some Time these Leaves open at the Tops and Edges, and shew their Form: the Flower-Bud and its tender Stalk are by Degrees thus inur'd to the Air; and they bear it without Hurt.

The Leaves fall opposite on the Ground, and are oblong, moderately broad, pointed at the End, and divided at the Edges; without Footstalks, and of a fleshy Substance. Their narrow Base, where it rises from the Ground, is whitish stain'd with Crimson, and from this Part it is hollow'd.

The Rib on the under Part is Crimson, and there run several oblique Fibres from it, ting'd with the same Colour.

The upper Side of the Leaf is very delicately variegated with a dusky brown upon a fine bright green, which is the Ground Colour.

The Rib on this Side is green; and the brown, which makes the Variegations, is dispos'd in an irregular Manner, like the Veins and Clouds in some of the fine Marbles.

This is the natural Condition of the Leaf; but in good Culture it varies greatly; not only in these Accidents, but in what might appear more fix'd and certain; Number and Form.

These Variegations will be sometimes purple instead of brown, and sometimes white. In the Place of two there will occasionally rise three, or but one Leaf: in the first Case they are usually narrower; and in the other broader and shorter than in the common State of the Plant; but this is Accident; no Mark of a Distinction of Species.

The Flower-stalk has no Leaves, it rises single, and is four or five Inches high, round, tender, and of a delicate Red.

At the Top is plac'd one Flower, very large, specious, too heavy to be supported upright on so weak a Stem, so that it droops; and does not, till fully ripen'd, turn up again.

This Flower is very large for the Plant; and in Colour, Form, and Variety of Aspect, exceeds most others.

It is compos'd of six Petals, and is in Colour, when in greatest Perfection, of the most delicate Crimson painting can express. In other Plants the Red varies thro' all Degrees, and it is sometimes white. At first the Flower is clos'd together, and hangs perfectly drooping; from this State by Degrees the Petals raise themselves, and become expanded in Form of a Star; but still there remains

April. a Part at the Base, clos'd to defend the Rudiment of the Fruit. The Petals expand from a certain Part, at about a fourth of their Length from the Stalk, and never open entirely.

The Flower, in this State, has its highest Beauty; the Crimson occupies all the remote Part of the Petals, but from the Centre there runs into each a radiated Spot of White, which connecting itself, where the Petals touch, forms in the Whole the Representation of a broad Star; such as Heralds have devis'd to dignify the principal Orders of Knighthood; or such as Nature forms with her pure Selenite, upon the yellow Coat of the *Septaria* *.

Within this lucid Star there stands another of a dusky golden Hue; its Base perfect yellow; but the radiated Part, which answers in every Point to the Rays of the white one, dusted with a deep tawney brown.

Thus appears the Flower in its full Glory; afterwards the Petals turn themselves back, and exhibit a new Form. This we have represented in the Figure, because thus the internal Parts are most expos'd to the Eye of the young Botanist. We now come to examine the Flower in due Method, to learn the Classical and Generical Characters of the Plant.

It rises naked from the Stalk, defended by no Cup. The six Petals are plac'd three outward and three inward, alternately; and they have a rounded swelling Base, whence they grow broader to the Middle, and thence narrower again to a Point.

Six Filaments and a single Style are most extremely conspicuous: 'tis for that Reason, as also in the former Instance, we have taken so large a Scope of Explanation; for they will serve the Student for a thousand other Lessons.

The Filaments are Snow-white, large at the Base, and smaller to the Top: their Buttons are long, furrow'd, and of a Violet Purple, dusted with white.

The Style is Snow-white, thick, longer than the Filaments, and at the Summit divided into three Parts, which are split at the End.

The Plant is therefore one of the *Hexandria* of LINNÆUS, and of its first Section, or, as he calls it, Order, the *Monogynia*.

The Seed-vessel is roundish, but smallest toward the Base; and it contains, in three Cells, many Seeds of an oval Form, but pointed.

Here the Student might stop his Enquiries, for we have seen the Structure and the Characters of the Flower: but let him who follows the Steps of Nature in our Course, never leave any Part unsearch'd: there may be Particularities yet unobserv'd; for the Filaments and Style are so conspicuous, the Flower needs not be torn open to descry them. Let that be done now.

He will thus find what no LINNÆUS yet has told him; that of the six Filaments, three grow to the Petals, and three to the Receptacle; and he will see plainly the Nectaria that Author so well distinguish'd. This Insertion of the Fila-

* Hill's Hist. of Fossils.

April. ments can only be found by our Method of taking the Flower to Pieces.

Let the Student begin with one of the three exterior Petals, and gently take it off, by pulling downwards; it will come entire and simple, with no Filament or Gland annex't, but with a plain smooth Base; the other two will obey the Hand in the same Manner.

There will remain upon the Stalk the three inner Petals, and all the six Filaments, whose Figure he will now distinguish very perfectly: and he will wonder how it came, LINNÆUS, usually correct, call'd them *brevissima*; for they are of very considerable Length, more than a third of an Inch, exclusive of the Antheræ.

He will, on this strict Examination, also blame the Term *obtusum*, apply'd to the Divisions of the Stigma, for they are split. Perhaps this Fault is to be laid on TOURNEFORT's Figure: for neither LINNÆUS nor any Man can go thro' all Nature with his own Hand.

The three outer Petals taken off, let our Student, in the same careful Manner, separate one of the three inner; he will find this come off with one of the Filaments annex'd to it, and so will the two others. If these three Petals be carefully taken off, they bring with them three of the six Filaments, the other three adhering only to the Receptacle, as do these also at their inner Edge,

so that 'tis difficult to bring them off entire.

April.

These three Filaments are inserted at the very Base of the Petal; and there is a kind of Furrow, along which they run, with a small roundish Gland on each Side close at the Base. These are the Nectaria of the Flower.

Culture of the ERYTHRONIUM.

The Plant is a Native of many of the Northern as well as Southern Parts of *Europe*, and also of *North America*. It thrives best on the Sides of Hills, where there is a little Shade and Moisture: this shews the proper Culture.

Let a Border be chosen that is open to the Evening Sun, shaded from Noon, and that will hold a little Moisture. Let this be fill'd up with an equal Mixture of rich Meadow-Earth and Pond-Mud, and in this propagate the Plants.

The ready Way is by Off-sets from the old Roots, which must be taken off in the Beginning of *June*, and planted immediately; but the better Method is by Seeds.

These should be chosen from fine Plants, and sown in *August* on the same Border, sheltering the Ground by a few Bushes in Winter, and afterwards keeping the Plants free from Weeds, and occasionally water'd.

C H A P. II.

The Management of the Flower-Garden, for this Week.

THIS Week let the tender Annuals, which are of a proper Growth for their Removal, be planted out into new Hot-Beds. Let these be covered deeper than the former; and the Roots be taken up with a great deal of Care: they must be shaded, and at Times water'd; and the Air must be admitted in the Middle of hot Days. We speak here of the tenderer Kinds only, the *Gomphrena*, finest *Amarantbs*, and *Double Balsams*.

The *China Asters* will be fit for transplanting; and as these in the finest Kinds are very beautiful, we shall advise the Gardener to manage them three different Ways, that he may have every Advantage of Variety and Succession.

Let the Plants now be divided into three equal Parts: let one third be planted out upon a Hot-Bed, with a Frame; another Parcel upon a flighter Hot-Bed, hoop'd and matted; and the third into the open Ground, in a fine sunny and rich Border. These last may take their Chance unremov'd; the others are to be transplanted again, as we shall direct at the due Seasons.

Let all Carnation Plants which are to flower the succeeding Summer, be carefully manag'd. Once again, let dead Leaves, if there be any such, be pick'd off; let Sticks be thrust carefully but firmly into the Ground, for tying them up; and

let them be fasten'd to them in two or three different Places; let the Mould be carefully broke about them, and, as it appears dry, refresh'd with gentle Waterings.

Mark out such Spots as will conveniently receive the several Kinds of *Lupines*, *sweet Pease*, and the small *Convolvulus*; and sow their several Seeds in well broken Mould. When the Plants come up, the weakest must be taken away, that the others may have Room; and after this Weeds must be clear'd away; and they must have the Support of Sticks, and frequent moderate Waterings.

Thus may end the Business of the Week in the Borders; but the Walks must now employ a great deal of the Gardener's Care and Time. The Grass will shew itself very strong in Growth, and if neglected but a few Days now, will be rank and coarse all Summer. It must be mow'd often, and roll'd carefully.

The too vigorous Growth of the Stalks will thus be check'd, and instead of a small Number of hard Stumps, left by succeeding Mowings, there will be thus an Abundance of young Leaves from the Ground-Joints of all that are taken off at their first shooting.

S E C T.

April.

S E C T. II.

April.

The Management of the SEMINARY, for this Week.

THIS Week let the Gardener finish the Sowing of biennial and perennial Plants for the Flower-Garden.

Let him dig up separate Pieces in somewhat sheltered Situations, and dividing each into several Spots, let him sow on them the following Plants; Hollyhocks, and Tree Mallows, Campanulas, Wall-Flowers, Stock-July-Flowers, Pinks, and Sweet-Williams.

They must be thined as they come up, and from Time to Time afterwards carefully weeded and watered.

Transplant Cythus's and Phillereas, Hollies and Yews, Alaternus's and the Cytisus's of several Kinds, out of their Seed Beds, or first Beds of Transplantation, to be ready for farther Removal, when wanted.

The Earth must be well broken; the extreme Fibres of their Roots trim'd off, and the Mould settled between them; after this, they should be fastened up to Stakes, and occasionally watered.

The Evening is the best Time of the Day for his, and a showery Season should be chosen. If Showers do not fall freely, their Place must be supplied with well regulated Waterings.

If there be Occasion, some Turf may be laid, wrong Side upwards round the Stems, but this will only be needful for tender Kinds in very dry Seasons.

Let four small Pieces be well dug up, in a Situation not too much exposed, and sow Sassafras and Magnolia Seeds, also the Acorns of the ever-green Oaks, and Cypress Seeds.

These must be covered half an Inch with fine Mould, and defended from Injuries, by a few Bushes scattered over the Ground, and by setting Traps for Vermin.

Let the Gardener now look carefully over his new grafted Trees. The great Danger is from the drying Winds of the late passed Weeks.

If the Covering of Loam be cracked, let him beat up some fresh; and renew it carefully. This Defence is the most essential of any Thing, after the immediate Business; for if the Wind gets to the Grafts, no Good is to be expected.

Let the Gardener next look over the Beds of Shrubs, transplanted from the Seed Ground. If Showers do not fall freely, let him water these Beds once in three or four Days, or all his former Care will answer no Purpose.

S E C T. III.

P O M O N A, or the FRUIT-GARDEN.

THIS is the Season when Insects will begin to hatch upon Fruit-Trees, and too much Care cannot be taken to destroy them. Their Eggs have lain all Winter in these Places, but the same Warmth of Sun, which brings out the young Leaves, hatches these Devourers also to feed upon them.

They are most troublesome on the weakest Trees; therefore the Care we have ordered to be taken, in digging up the Ground; and strengthening their Growth by Manures, will in a great Measure prevent them; but they must be watched carefully now, and where they appear destroyed.

The first Sign of them, is a fading and curling up of the Leaves. Let the Gardener get a Quantity of Tobacco-Dust and Stalks, and use it thus.

Let him mix with the Tobacco-Dust, a little Pepper, and early in the Morning, let him take out a Box of this: pull away the worst of the curl'd Leaves, and strew the Dust over the Place.

Then let him put into a large Tub, a good Quantity of Tobacco Stalks, and half as much Wood Soot, and upon this pour boiling Water.

Let this stand till three in the Afternoon the next Day, and then with a large soft Brush, wash all the Places with it, where the Dust was sprinkled.

This is not only excellent to destroy the Insects, but to promote the Growth of the Part;

it answers the double Purpose of washing off the present Race of Insects, and preventing others.

In Proportion to the Care taken now, the Plants will shoot strongly; and Weeds will rise among them with the same Vigour; these must be taken away, that all the Nourishment may go to the Plants; and if there be not frequent Showers, the Beds must be watered once in four Days.

If there be Vines in the open Ground, in the Vineyard-Method, this Week they should have a careful Dressing. The first Thing is to stake them; and for this Purpose, let the Stakes be found, well fixed, and the Vines ty'd regularly to them: the sparing a little Trouble, will be attended with a great deal of Disadvantage.

This done, let the Ground be dug up a full Spade depth between the Rows, and the Clods well broke.

Thus let it lie free and open, to receive the Influence of the Air.

Look over the Fruit-Trees which were inoculated the last Season; if the upper Part of the Stock have not been cut off before, let that be done now: and let the Ground be stirred about the Roots, and after this give a gentle Watering.

The Growth of the Bud at this Time is very essential, and these are the Ways to forward it. Let the Watering be repeated occasionally, unless there fall naturally Showers.

S E C T.

April.

SECTION IV.

April

CHLORIS, or the KITCHEN-GARDEN.

LOOK over the Beds of Aromatick Plants, for if there want a Supply, this is the last good Opportunity of doing it.

Sow Hyssop and sweet Marjoram; and several Kinds of Thyme, and Summer-Savory; and in Places where the Ground is somewhat moister, plant Mint, Baum, and Penny-royal.

If there want Showers, these must for the first Fortnight have frequent Waterings.

The Seeds will require no Care: when the Plants appear, they must be watered, and after weeded, and when it is seen which are the strongest, the weaker must be pulled up, to give these free Room for Growth.

This is a very favourable Season for Sowing, and let the Gardener use it accordingly, for Supplies of his several Crops.

Radishes should be sown now upon light, rich Earth, and often watered. They will come to a due Bigness in a very short Time, and will be the finest of the Year.

Let those Beds which were sown with them earlier, be kept clear from Weeds, and water'd once in four Days, unless there be sufficient Showers.

In small Pieces of Ground, the Weeding is best done by Hand, but in larger, it must be by Hoeing.

Let the Sowing and Planting of Beans and Pease, be yet continued; the finest Kinds of Beans should be selected for a late Crop; and the Marrow-fat are the best Pease.

The Ground must be well dug for them; and the Rows should be at such a Distance, that the Spade can be hereafter brought in between them: this will be the Method of bringing them to Perfection.

Once in six Days, let a small Piece be dug up for young Salleting. The Success of this depends upon the Richness of the Soil, and Fineness of the Mould.

This is the Time, when the several Kinds sown for this Use grow most freely of all, and the Produce will be tenderest and finest.

The Seeds must be sown in Drills, and not too thick; each Kind separate, and the Seed well chosen. They must be covered lightly, and encouraged to shoot, by frequent Waterings, unless Showers come as freely as could be wished. They will thus be tender and thick in the Stalk, and the Leaves fresh and full of Juice.

They should be gathered just in the Time they attain due Bigness, and as they continue in Perfection only five or six Days; there should be always a Succession ready by that Time.

The commonest Things are most neglected; but we shall add one Caution, regarding young Salleting, which will render it much finer than in other Methods.

Let the Gardener over Night, water the Quantity he intends for the next Day's Service, and mark it with Sticks, that he take up the same Part; let this Watering be given about five in the Afternoon; let the Sallad be gathered early the next Morning, taking it up by the Roots, not cutting it, and let it be laid in a Cellar, between two Dishes; just when it is wanted for the Table, let the Roots be cut off; and leave less of the Stalk, than is usually sent up.

These little Cautions, the best Gardeners keep to themselves, and upon them depends the Success of all their Gatherings.

Mr. WILSON acknowledged to me, this was all his Secret, for having the Spring Salleting so firm and fleshy, as every one admired.

The *French* of late have got into a Method of raising this young Sallad in Boxes of Earth in Cellars; and prefer it to what grows in Hot-Beds, or the open Air. The Principle is the same, for 'tis the Sun that exhales the Juices of these young Leaves, and renders them flabby. This is prevented in our Way, by pulling them in a Morning, before that Days Sun has Power, after swelling them out by a good Watering.

Look over the Places where Crops begin to grow strong, and give them all the Advantages of Cleanness from Weeds and fresh broken Earth for Shooting.

When the Rows are so distant as in the Pease and Beans of our Direction; let the Ground be well dug up with the Spade, and some of the fine Mould thrown on each Side, to strengthen their Stems.

When there is not this Space, as in the Carrot and Parsnip Salsfee and Scozonera Beds, hoe up the Ground well; and where the Plants stand yet closer, weed by Hand.

In each Case, follow the Weeding by gentle Waterings, when Nature denies Showers.

Plant Sticks for those Rows of Pease which require it, always remembering that it is best done early, for these Plants are checked very much by their Stalks trailing on the Ground.

If there be any Beans planted at those large Distances we have recommended, let a firm Stick be thrust into the Ground near each; and let them be ty'd up in two or three Places: it is not conceived, how much the Vigour of a Plant of this Kind is promoted, by preventing its rocking at the Root; nor will any, but those who have try'd, imagine how large a Quantity of Beans will be obtained from a very small Number of Plants thus managed.

The Ground must once in a Fortnight be well dug up about them, and as in all the other Cases, Water allowed, if Showers do not prevent the Labour.

E D E N:

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R X X X I I .

For the End of *A P R I L* .

S E C T I O N I .

F L O R A , or the P L E A S U R E - G A R D E N .

C H A P . I .

Flowers and curious Plants now in their Perfection.

I. The P E R S I A N I R I S .

April.
Pl. 32.
Fig. 1.

IT would not be easy to find a Gardener who was unacquainted with this little *Flower-deluce* ; and impossible to produce the most in-curious Observer who ever passed it by un-noticed.

It is valu'd according to its Merit, but the Culture commonly allow'd it will admit Improve-ment ; and, in Consequence, the Flower may be render'd yet more beautiful.

The earlier Botanists were as well acquainted with it as the present, and as much admir'd it. FERRARIUS calls it *Iris Persica variegata praecox*, Early variegated *Persian Iris* : our PARKINSON, *Iris bulbosa Persica* ; and from him the Gardeners (for, till the succeeding MILLER, he was their Oracle) call it *Persian Iris*.

TOURNEFORT and RAY, admitting the Form of Roots in certain Kinds into Generical Charac-ters, separate this and some others from the *Iris* Kind : RAY under the Addition of the Term *bulbosa* to that Name ; but TOURNEFORT under a new one, *Xiphion* : he calls it *Xiphion Persicum praecox flore variegato*. The Reader needs not, we suppose, be told that his faithful Follower, Mr. MILLER, recites it under the same Name, not as an *Iris*.

LINNÆUS, much superior to these slight
Numb. XXXII.

Men, acknowledging none but the Parts of Fruc-tification, as distinctive Characters for Genera, refers this where Nature plac'd it first, and calls it *Iris* : he adds, as the Distinction of the Species, *corollis imberbibus, foliis subulato canaliculatis, caule longioribus* : Beardless *Iris*, with furrow'd, slender, and sharp-pointed Leaves, longer than its Stalk.

The Root is of the bulbous Kind, but oblong, Pear-fashion'd, white, insipid to the Taste, and cover'd with many Films, under which its main Skins or Coats lie. This differs more in Taste from the common *Iris's*, than in Figure. Their Juice is acrid and intolerable. From the Base of this Bulb run many thick yellowish Fi-bres, tufted with numerous Hairs.

The Stalk is very short, rarely more than three Inches in Height, and at the Base it is cover'd with several thick whitish Membranes ; these are Continuations of the outer Coats of the Root, which Nature extends beyond their usual Form, to defend a tender Stalk rising in severe Seasons : they envelope one another, and open at the Points, to let out the Stalk ; and they are rib'd : the Ribs faintly stain'd redish.

With the Stalk rise about six Leaves from within the Covering of the same common Mem-brane : they are longer than the Stalk, but
5 C not

April.

April. not much; they are narrow, hollow'd, sharp-pointed, strongly rib'd lengthwise, and of a greyish green: they surround the Stalk at the Base; but within them it is covered with two others, shorter, greener, and more fleshy.

The Stalk when naked is of a pearly whitish Colour; but these Leaves which closely cover it are green. The Flower stands single at the Top, and is large and very beautiful.

It has no Cup: a few flight Films serve that Purpose. The Shape is singular, as well as the Colouring, and it is compos'd of six Petals: they have been accounted nine; but this we have explain'd before. The broad Tops of the Style are in this like those of the other *Iris's*, and therefore easily mistaken for Petals.

Of the proper six, three unite themselves into a Body, and stand erect in the Middle; the other three are plac'd obliquely; they all adhere by their Bottoms; and they are long, large, and obtuse. The three broad Divisions of the Stigma, which have been call'd Petals, are turn'd back and downward.

These are the Parts of this Flower, and their Disposition; their Colouring must be shewn by the Pencil alone, for Words can do it but very faintly.

The Ground Tinct is a pearly white, stain'd more or less with blue. The three outermost Petals have all along their Middle a broad Line of yellow, diversify'd with Spots of such a lively brown, as forms the inner Star in the Flower of the *Erythronium*; and on each Side run innumerable little Lines of Violet.

The Extremity of this golden Line stops short of the End of the Leaf, and it is there of a finer yellow than elsewhere. At the End is a large Spot of the most perfect deep violet Purple, with the Velvet Hue, and this is surrounded with white. The upright Petals are more pearly, but they have also their elegant Variegations, as have the Divisions of the Stigma.

The Filaments are three: they are affix'd to the Bases of the three outer Petals, and they are short, but crown'd with very long Buttons, flatted and furrowed.

The Style is single and short, it rises from a Rudiment of the Seed-vessel, plac'd beneath the Receptacle of the Flower, and it is crown'd with the foliated Stigma we have describ'd already.

The Seed-vessel is oblong, mark'd with three Ridges, and fill'd with numerous large Seeds.

The three Filaments shew the Plant one of the *Triandria*, the third Class of LINNÆUS; the single Style, one of the *Monogynia*, its first Section.

Culture of this IRIS.

This elegant Species is a Native of the *East*, and demands and deserves some Attention: it is never without Beauty; but we shall inform the Gardener how he may add greatly to the Variety and Lustre of its usual Colouring.

The Plants must for this Purpose be rais'd from Seed; and, to give them all the Advantages of Culture, the Soil, Situation, and Refreshment

of the Ground must be attended to with Care. April. In *November* let him mix up the following Compost, to lie nine Months in the Air before it is us'd.

Dig a Barrow of Mould from under the Turf in an upland Pasture: mix with it a Bushel of Earth from under a Wood-Pile, half a Bushel of old Cow-dung, a Peck of Marle, or, in its Place, a Peck and half of Pond-Mud, and half a Peck of Sand. Strew over these a Handful of Wood-Soot, and two Ounces of common Salt. Mix them very well in a Heap, and turn this as often as Weeds appear.

In Spring mark three or four of the finest Flowers where they blow strong and lively: as they fade, give once in three Days gentle Waterings; and now and then stir the Surface of the Mould. Thus forward the Seeds; and when they have attain'd their full Bigness, let them stand ten Days unwater'd to harden.

Then cut off the Heads, and lay them on a paper'd Shelf in an airy Room.

When they have lain to be well dry'd, open them, shake out the Seeds, and scatter them to harden on the same Shelf.

Then prepare Boxes for the sowing them. Let these be a Yard long, two Foot eight Inches broad, seven Inches deep, and nail'd up of firm but rough Boards. Bore five Holes at equal Distances in each, and cover these with Oyster-shells. Then fill the Boxes with the Compost, and scatter on the Seeds pretty thick.

Sift over them a Quarter of an Inch of the same Compost, and set them upon Bricks, in a Place where they may have the Morning Sun, but be shaded from that of Noon. The End of *July*, or Beginning of *August*, will, according to our Management, be the Time of sowing them.

Keep the Mould clear of Weeds, refresh it at Times with a little Water; and in the Beginning of *October* remove the Boxes into a Place defended from all Cold, and open to the Noon Sun: and let a Mat be hung from the Wall, that may in bad Weather be let down over them.

Early in Spring the Plants will appear. Let the weakest be taken up where they rise too thick; let the Mould be kept clear from Weeds, and refresh'd now and then with Water; and at the End of *April* let them be remov'd into their first Place.

In *July* the Leaves will be decay'd. Let a Quarter of an Inch of fresh Compost be sifted over them; and let them in *October* be remov'd again into their Winter Situation.

All this Time the Heap of Compost, from which the Filling of the Boxes was taken, remains open to the Air, and must be turn'd at Times, and kept from Weeds.

The next Year, in *July*, when the Leaves of the young Plants are decay'd, a Border must be prepar'd for the Reception of their Roots.

Chuse a warm shelter'd Place, take out the Mould, and throw in two thirds of the Compost. Lay the Surface level, and draw Lines lengthwise and a-crofs, at four Inches and a half Distance. Mark an Opening in the Centre of each little Square,

April. Square, and then separate the Roots from the Mould in the Boxes, picking them out by Hand, not lifting the Mould, as may be done in some Cases.

Set one Root, in the Centre of each Square, upright and steady; and when all are plac'd, sift over them some of the remaining Compost; let them be cover'd two Inches above the Top, and leave them thus to Nature. Weeding and Watering are all they require further.

The remaining Compost must be saved to sift over them, a Quarter of an Inch at a Time, in Autumn; to defend them from Frost, and in Spring, before their shooting. The third Year they will flower, and there will be found a glorious Variety.

The finest must be mark'd; and when they

have flower'd three Seasons, Seeds must be sav'd April. from them, and sown in the same Manner. The first Crop will exceed the common Flowers of this Kind; but the Produce of the best among these will exceed the Gardener's warmest Expectations.

Once in three Years the Roots should be taken up, but they must soon be planted again, for they are spoil'd by the Air. This taking up is for removing the Off-sets, and refreshing the Bed with new Compost; and that should be made as the first.

It is remarkable in this Plant, that the Colours in its Flower are in a Manner invariable in their Place and Dye, but the Improvement is surprizing, which from this Management they admit in Lustre.

2. TRIFOLIATE ARUM.

Pl. 32. We are accusom'd to a Plant of this Kind
Fig. 2. under our Hedges; which, if less common, would not be seen without Wonder: for Nature scarce affords a more singular Genus. But with all the Peculiarity of the common Kind, this, which is only to be found where curious Industry has plac'd it, has great Beauty.

Our Encouragers of Botany have it from the American World, whence it also came early into Europe after the first Settlements; and those Authors who have written since that Time do not fail to name it.

In CASPAR BAUHINE we read of it under the Name of *Dracunculus sive Serpentaria triphylla Virginiana*; and under this Name DODART has figur'd it.

The Characters of the *Arum* are too strong impress'd upon it to be overlook'd, and all else have given it under that Title, tho' with various Additions.

MORISON has describ'd it by the Name of *Arum pene viridi*; and PLUKENET of *Arum triphyllum pene atro rubente*: they saw the Plant from colder Parts of America, and suppos'd it different from the original Kind first shewn us from the *Brazils*; but the Variation is slight, and no more sufficient to make a Distinction of Species than the green Club in MORISON's Plant, or deep red one in that of PLUKENET; no more than the red and white we see in the common *Arum* of our Hedges.

LINNÆUS, to whom the World of Science is indebted greatly for his Reduction of imagin'd Species, merits that Praise in this as strongly as in any Instance.

He justly determines from the perfect Sameness in the more essential Parts, that the Difference in Leaves between the *Brazilian* and *Virginian* Plants is only accidental; and referring both to one Species, adds, as its distinctive Title, *acaule foliis*

ternatis: Ternate-leav'd *Arum*, with no rising Stalk.

The round Body, which in this, as in the common *Arum*, rises a little from the Ground, and gives a firm Base to the Leaves and Flower, is not to be call'd a Stalk: this has no other; and the Term *acaulous* is needful to distinguish it from the *Dracontium*, which LINNÆUS ranks in the same Genus.

The Root is roundish, soft, of the Bigness of a Filberd, and covered with a pale brown Skin. From its Top spread many Fibres.

The whole Plant consists of two Leaves, rarely more, and its Flower; which all rise together from the Head of the Root, envelop'd with a thick Film; and before that opens to let the Footstalks of the Leaves spread, the whole forms a round Stem. The Membrane is whitish toward the Ground, greener upwards, and spotted with a wild Irregularity with red.

The Leaves have long Footstalks, and these, with their hollow filmy Bottoms, are also of a pale green spotted with Crimson.

Each Leaf is compos'd of three Parts, oblong, broad, wav'd and pointed. The Colour is a greyish green; but the Veins, which are extremely conspicuous, are red.

Between the Footstalks of the Leaves rises that of the Flower, spotted as the rest, but less so.

The Flower itself is of that strange wild and irregular Form, which disgraces all Systems in the common *Arum*. It consists of a great oblong hollow Scabbard, containing the Parts of the Fructification in its defended Base, with the rising Club, which those Authors we quoted before, have idly call'd *Penis*; and nothing of the Nature of the *Corolla*, or colour'd Part of a Flower.

The Scabbard is extremely beautiful in this Plant; it is very large, open, and irregular at the Tops and Edges. Its Ground Colour on the

Out-

April. Outside is a fine strong green, and on the Inside purple, strip'd throughout with broad upright Bands of white: in this, as seated in a Canopy, appears the Club or Spadix; it is oblong, thick, rounded, obtuse at the End, and varies in Colour from pale green to white, and to the most perfect bloody purple.

This is all that is seen till the Scabbard is torn open: then appear the Parts of Fructification. Two Rows of Glands are seen on the Midst of this Part of the Club; they are thick at the Base, and terminate in hairy Extremities; and between these are situated a Number of Buttons, but without Filaments, adhering to the Body of the Spadix: they are large and square.

Round about the Base of the Spadix stand numerous oval Bodies, tip'd with hairy Filaments: the first nam'd Bodies were Nectaria, but these are the Rudiments of Fruit: these feather'd Tops are their Stigmata, and they have no Style. Each is follow'd by a roundish Berry, in which are many Seeds.

No Plant will more perplex the young Botanist with regard to its Class and Place in a regular System. He is to be inform'd that LINNÆUS, from the Situation of the Buttons, places it among the *Gynandria*; and from their Number in that Section, which contains the *Polyandria*. This and the Fig are Subjects for the Botanist to examine with Attention.

Culture of this ARUM.

April.

We have said that it is a Native of *America*, and that in various Degrees of Heat and Cold, but it is always found in the same Soil: this is a mellow Earth, enrich'd by fallen Leaves and rotted Boughs of Trees, whose Shade in some Degree covers it. Thus we are to raise it, and it will attain all its natural Perfection.

Let a Compost be thus made:

Mix equal Parts light Pasture Mould, Pond Mud, and Earth of an old Wood-Pile. Throw them in a Heap, and let them lie some Months.

Let Seeds be sav'd in *America*, and sent over; and in the latter End of *February* let a Couple of Pots be fill'd with the Compost: let the Seeds be scattered over the Surface, and covered with a Quarter of an Inch of the same Mould sifted over them. Let these be plung'd up to the Rim in a Bark-Bed, and the Earth kept moist.

When the young Plants appear, let the weakest, where they stand too close, be taken up; and when the others are of a Size to remove, let each be planted in a small Pot of the same Compost.

Let them be shaded till they have taken Root, and then inur'd to the Air by Degrees. In *June* let them be taken entirely out, and a Fortnight after planted in a warm Border, where there is some Shade, fill'd with the Compost.

Here they will stand our Winters; and after the first Stock is thus rais'd they may be encreas'd by parting the Roots, which should be taken up for that Purpose in Autumn.

3. DOTTED ACADIAN LILLY.

Pl. 32. We shall figure to the Gardener many finer Lilies than this little one; but it deserves his Notice; there is a Delicacy in the whole Plant extremely pleasing; and, when well manag'd, a Lustre and Variety in the Flowers, inferior to few.

Those who have written of the *American* Plants, have almost universally nam'd it; and none under any but its proper Title.

Though inferior to the Generality of Species, it is so much a Lilly in the Flower, that none could call it by any other Name.

MORISON calls it *Lilium martagon canadense maculatum*.

BARRELIER and TOURNEFORT, *Lilium angustifolium flore flavo maculis nigris distincto*.

LINNÆUS, *Lilium foliis verticillatis floribus reflexis, corollis campanulatis*: but the Flower droops so little, that the Word *reflex* says more than it should.

The Root is of an oval Form, covered with white Scales of a thin Substance, and compos'd of thicker Parts of the same Form.

The Stalk is slender, brown, upright, and glossy; very weak, but a Foot in Height.

The Leaves stand at small Distances, about five naturally in a Place, surrounding the Stalk, and rising obliquely upwards; but between these Clusters there are usually some scatter'd ones plac'd singly and irregularly. They have no Footstalks; they are oblong, moderately broad, and of a dusky green, rib'd lengthway with pale Ribs; pointed at the Ends, and undivided at the Edges.

At the Top of the Stalk is plac'd a single Flower, large and elegant. The Tenderneis of the Stalk makes it hang a little, but it is not of the reflex Kind.

It rises naked from the Stalk, without any kind of Cup; but the uppermost Cluster of Leaves serves it in the same Degree of Defence with the Involucrum of the Anemonies, and some other Kinds.

The Petals are six; they are oblong, broad, rib'd at the Back, and hollow'd each Way; and are so dispos'd, widening from the Base, that the Flower is Bell-shap'd, rounded, and smallest at the Base, wider to the Mouth, and the Points of the Petals are thick and turn'd back along the lower

April. lower Part of each Petal runs an obvious Line, the Nectarium of the Flower.

The Colour varies in the different Parts of the Petals; they are of a bright gold yellow at the Base, of a firey redish yellow in the other Part, and in the Middle spotted in a wild but elegant Manner with a deep purple.

The Ribs and Hollows are most plain in the three broader Petals; the other three are narrower, and have them not in any Degree so conspicuous.

In this, as in the other Lillies, the Parts of Fructification are very apparent.

The Filaments are six, long, slender, plac'd near to one another, upright, and crown'd with large purplish Buttons.

The Style is single, and of a fleshy red; it is conspicuous among the Filaments, and beautifully diversifies the Flower. It rises from an oblong Rudiment, with six Ridges, and is crown'd with a large Head or Stigma, of a triangular Figure.

The Seed-vessel is divided into three Cells, and is fill'd with large Seeds in a double Series.

The six Filaments and single Style in this Flower refer the Plant obviously to the *Hexandria Monogynia* of LINNÆUS, the sixth of that Author's Classes, and its first Section.

Culture of this LILLY.

It is a Native of many Parts of *America*, and lives there in a light mellow Soil, where it is not too much expos'd to Cold. This must be our Rule for its Culture.

Let a Compost be thus made for it.

Take a Bushel of fine Meadow-Earth, half a Bushel of Pond-Mud, a Peck of Cow-dung well rotted, and the same Quantity of Wood-Pile Earth: mix in a little Wood-Soot, and throw all up to the Weather.

Let a Border be fill'd with this in a warm and well shelter'd Part of the Garden, and there plant Off-sets of the Roots, if they can be obtain'd conveniently: but to have the Plant in Perfection, the Seeds should be procur'd from *America*. These must be sown in Boxes in the same Compost; and when the Roots have some Bigness, they must be planted out into such a Border.

Seeds from good Flowers of our own will answer very well, but the best Flowers are rais'd from those ripen'd in *America*. The Flowers from these have the true firey Orange in the Body, and they have Spots of the finest deep Violet, nearly black.

4. QUADRIFOLIATE BIGNONIA.

Pl. 32. This is a very specious and noble Plant, Native of the *American* Islands; and will acquire in our Gardens, even with moderate Care, an equal Perfection to what it shews in those Places.

Fig. 4. All who have written on the Plants of that Part of the World, have spoken of it, though under various Names.

DODART and PLUMIER have call'd it *Clematis*. — Our PLUKENET adopts also that Name. The *English* SLOANE, who wrote before Botany attain'd any Part of its present Perfection, call'd it *Gelsemium hederacum tetraphyllum*. TOURNEFORT calls it *Bignonia*; and that Name LINNÆUS also adopts for the Genus; adding, as the Distinction of the Species, *foliis conjugatis cirrho brevissimo arcuato tripartito*: Conjugate-leav'd *Bignonia*, with short Tendrils, divided into three Parts.

The Root is long, thick, and black on the Outside, furnished with many Fibres, and of a disagreeable bitter Taste.

The Stalk is very long but weak, and unable to support itself; Nature has therefore given it Tendrils wherewith to climb, form'd in a peculiar Manner for laying hold of every thing that comes in its Reach: they are long, slender, curl'd, divided into three Parts, and these often again subdivided into Portions scarce thicker than Hairs.

The Stalks themselves are redish, smooth and tough: they naturally wind about any thing that is able to support them; and that Way, and by

Nº 32.

the Assistance of these Tendrils, keep themselves up to a vast Height, covering, where they flourish best, Trees and Bushes.

The Leaves are oblong, broad, and not unlike those of the Laurel, but they have a kind of Appendage or Ear at the Base. They rise in regular Number, four from each Joint; and they are supported on a divided Footstalk, of an Inch long, from the Centre of whose Division rises also the three-parted Tendril.

Their Colour is an elegant green, paler on the under than on the upper Side, and rib'd with purplish Veins.

The Flowers are large and elegant, they rise from the same Part with the Leaves, usually two from each Joint; and in the full Blow they thus cover the Plant, and afford a very rich Appearance. They are two Inches in Length, and their Colour is a rich Orange Scarlet.

Each has its Cup, small, hollow, and cut into five Divisions at the Edge. The lower Part is green, but the Segments ting'd with yellow.

The Flower itself is form'd of one vast Petal, long, hollow, and gaping at the Mouth. Its Base is small and tubular, and is lodg'd within the Cup. The Body of the Flower is very long belly'd, and open. The Divisions at the Rim are five; two of the Segments which stand uppermost turn back, the three others expand themselves below.

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In

April. In the Centre rise four Filaments; they are long, slender, smallest at the Top, and crown'd with a kind of double Buttons.

The Style in the Midst of these is single, and the Top a little swell'd.

The Seed-vessel is a long Pod, divided into Cells, and fill'd with many flat alated Seeds.

The different Length of the Filaments here determines the Class of the Plant: where two are longer than the rest, the LINNÆAN System places it among the *Didynamia*: and the Section is that of the *Angiospermia*, those which have the Seeds not naked, but in Capsules.

Culture of this BIGNONIA.

The Elegance of this Plant, when covered with its Flowers, exceeds almost every thing in our Gardens; and, with due Care, it bears the open Ground.

Where it is native 'tis always found in a deep rich Soil; and no Compost need be made for its Reception here: for nothing will supply it better than rich Garden-Mould.

Tho' it will live our Winters in a good Situation when it has acquir'd some Strength, the

April. young Plants are tender. It will be therefore proper to raise them in a Hot-Bed, and by Degrees inure them to the Air.

Let good Seeds be procur'd from the *West-Indies*; and early in Spring let them be sown upon a Hot-Bed, among the tender Annuals: they will require the same Care with the rest, and no other.

When they have had their repeated Removals with the others, in the Manner we have directed for the raising Annuals, they are to be transplanted into an open Border, expos'd to the South Sun, against a Wall, and defended from cold Winds; here they will grow very fast, and the second Year they will flower.

After this, they will only require pruning in Spring, to keep them in Order, and taking out dead Stalks and ill growing Branches: their Tendrils will fasten them very well to the Wall, and they will every Year, early in Summer, cover it for a vast Extent with their noble Flowers.

After this, they may be increas'd by laying the Branches which root freely, and after one Year will be fit for removing into those Parts of the Garden they are intended to decorate.

5. EVER-FLOWERING IBERIS.

Pl. 32.
Fig. 5.

The Flowers of the small Shrub we here recommend to the Gardener's Care, are not singly large or conspicuous, yet there does not want sufficient Elegance in the Whole, to merit all the Attention that has been shewn to it. Tho' the Flowers are frivolous separately, they make a handsome Appearance in the Bunches, wherewith the Branches naturally are terminated; and the whole Plant has a pleasing Aspect.

The early flowering also, and the long Continuance, are Considerations of no slight Account. There is no earlier Flower of Spring.

With good Management, the Shrub will be kept blowing the whole Summer; and even in Winter it is rarely altogether bare: it is therefore well call'd Everflowering.

All who have nam'd it, speak of it with Praise. ZANONI calls it *Tblaspi fruticosum Persicum foliis Cheiri*. BOCCONE, *Tblaspi latifolium Polycarpon foliis leucii*; and SEBA, *Tblaspi fruticosum semper florens*.

LINNÆUS, with Justice, removes it from the Genus *Tblaspi*, and calls it *Iberis*. To this Genus, according to the Character he has establish'd, it evidently belongs; and he distinguishes it from the other Species, by the Addition *frutescens foliis cuneiformibus obtusis*: Shrubby *Iberis*, with obtuse cuneiform Leaves. By this Name he distinguishes a Leaf, which is longer than broad, and is smaller all the Way from the Extremity to the Base.

The Root is woody, long, divided, white, and hung with a few Fibres.

The Stem is woody, irregular in Growth, and two Foot in Height, divided into many Branches regularly, and handsomely cloath'd with Leaves. The Bark is dusky on the Stem, and paler on the Branches.

The Leaves have no Footstalks: they stand at small Distances, and are oblong and undivided at the Edges: they adhere by a narrow Base, whence they grow gradually broader to the Extremity, where they are rounded. Their Colour is a strong but often brownish green; and they are of a firm and fleshy Substance.

The Flowers are white: they spread themselves in round and thick-set Tufts from the Tops of the Branches, and they are succeeded by flat Pods. The White of the Body of the Flower is agreeably diversify'd by the Filaments, which are very conspicuous, and of a pale Crimson, and have yellow Buttons. The Flowers have a light and very agreeable Fragrance, not unlike the Smell of the Violet.

No Class more, than that to which the Shrub belongs, demands the Attention of the Student: it is the *Tetradynamia*. The Filaments in the Flower he will find to be six; and two of these shorter than the other four.

The Flowers must be examined singly. Each has its little Cup, compos'd of four small oval hollow'd



The Persian Iris

Trifoliate Arum



Dotted Acadian Lilly



Quadrifoliate Bignonia

Everflowering Heeris



Blue Cluster Flowered Aster

April. hollow'd Leaves, of equal Bignefs, and falling with the Flower.

The Petals, composing the Body of the Flower, are four, unequal in Bignefs, two being plac'd outward, large and rounded; the other two standing more within, and being small and turn'd backward.

In the Midst of the six Filaments rises a short and single Style, crown'd with a blunt Top.

The Pod that follows is of a rounded Figure, compress'd; and has at the upper Part a split Rim. It is divided into two Cells, with a pointed Membrane, and in each Cell contains a single Seed. The entire Pod is terminated by an obtuse Point; and, when ripen'd, is of a brownish Colour.

On this Construction depends the Propriety of LINNÆUS's Conduct, in arranging this Plant not with the *Tblaspi*, as had been usual, but with the *Iberis*.

Its four longer Filaments shew it to be one of the *Tetradynamia*; and the Shape of the Seed-vessel throws it into that Section which comprehends the *Siliculose*.

The *Tetradynamious* Class is not divided according to the Number of Styles, as most of the others; but comprehends, under two distinct Sections or Orders, the *Siliquose* and *Siliculose* Plants; the *Siliquose* are those whose Fruit is a long Pod, and that terminated without any particular Point from the Remain of the Style.

The *Siliculose* are those whose Seed-vessel is short, and is terminated by a conspicuous and large Point, the Remain of the Style. This therefore belongs to the latter Order.

Culture of this *IBERIS*.

It is a Native of *Persia*, and was thence brought early into the Gardens of *Italy*, whence scatter'd Seeds, which shot as freely as in the native Climate, spread it in many Places over the Fields.

In the *East* it grows universally in a light strong Soil, upon the Sides of Hills, and is usually most full of Flowers where the Ground is poorest.

The Method by which it is brought to greatest Perfection, is raising it in Pots, and sheltering it in a Greenhouse in Winter; where it will flower without Intermission.

The Compost best suited to the Plant, is this:

Mix a Bushel of Mould from an upland Pasture, with half a Peck of Marle, and a Peck of Sand. If there be not Marle at Hand, a Peck and half of Pond-Mud may be us'd in its Place. Mix these well together, and fill a small Pot in Spring. Sow the Seeds from warmer Climates, or those ripen'd here, upon the Surface, early in Spring.

Set the Pot in a Hot-Bed that has but little Heat, and sift over the Seeds a Quarter of an Inch of the same Compost.

Raise the young Plants in the usual Manner; and when they are three Inches high, plant as many as are intended to be preserv'd in separate Pots. Shade them till they have taken Root, then harden them by Degrees to the free Air. Set them out among the Greenhouse Plants in Summer, and take them into Shelter in *October*, placing them near the Windows, that they may have as good Air as can come into the Place. They will thus flower throughout the Winter.

The Plant is hardy enough to bear the Air with less Caution; but it thus flowers in full Perfection.

6. BLUE CLUSTER-FLOWERED ASTER.

Pl. 32. The innumerable Quantity of this Plant's
Fig. 6. Flowers recommend it to the Gardener; for single they are inferior to many of the common Kinds, tho' not wholly without Beauty. Its easy Culture joins also to give it a Claim to some Regard, and with these the Duration of its Bloom.

The Writers on Botany have been long acquainted with it. They call it *Aster Tripolii flore*, *Aster minor Tripolii flore*, and *Aster latifolius Tripolii flore*.

LINNÆUS is oblig'd to give a longer Name; the great Number of Species under this Genus render'd it unavoidable. He calls it *Aster foliis lanceolato-linearibus subcarnosis, integerrimis, planis, floribus corymbosis fastigiatis, pedunculis foliosis*: *Aster* with fleshy, plane, undivided, narrow and spear-pointed Leaves, with cluster'd Flowers on the Top, and leafy Footstalks.

The Name broad-leaf'd might mislead the Student; but he is to be told it is not given this Plant in an absolute Sense, but relative to one

with grassy Leaves. LINNÆUS's Name is distinct and valuable with all its Length.

The Root is oblong, slender, blackish, and furnish'd with innumerable tough Fibres.

The Stalk is upright, firm, and a Foot and half high: the Rind is brown, and it has a light Pith within.

The Leaves are very numerous, and plac'd irregularly from the Bottom to the Top: they are long, narrow, nearly of equal Breadth all the Way, but pointed at the End. Their Colour is a dusky green. They have large whitish Ribs, and they are of a fleshy Substance.

The Flowers stand on the Summits of innumerable little Branches, which spreading every Way from the larger Divisions of the main Stalk, form a vast Tuft, resembling an Umbel. They are moderately large, of the radiated Kind, and have the Ray of a fine blue, the Disk yellow. The Seeds are small, and winged with Down.

We have treated before of several of the composite

April. posite flower'd Plants; and the Student needs not now be told at large that he is to seek the Characters of the Clafs in the separate Floscules which form the Disk.

Let him observe these, and the radiated ones which make the Verge; but first the general Cup: this he will find compos'd of numerous small Scales, laid like the Tiles of a House, over one another; and the Points of the outer ones prominent.

In the Disk he will find tubular Floscules, which have the Male and Female Organs; and on the Verge flat and ligulated ones only with female. In the tubular Floscules are convergent Buttons, five in each, supported on short slender Filaments, and a Style of equal Length, split at the Top, and rising from the Rudiment of a Seed.

In the female or ligulated Floscules of the Rim, are no Filaments or Buttons; but there is a single Style from the Rudiment of a Seed, divided at the Top into a curl'd Stigma.

The Coalescence of the Buttons in the tubular Floscules shews the Plant one of the *Syngenesia*: to know in which Section it is plac'd, he must observe the ripening of the Seeds: he will find these succeed the Flowers of the Disk, and also those of the Rim.

The Buttons of the tubular Floscules therefore impregnate their own Rudiments and those in the others: therefore the various Impregnation is not necessary; and the Plant is refer'd to that Section, containing the *Polygamia Superflua*.

April.

Culture of this ASTER.

It is a Native of *Spain, Italy*, the South of *France*, and many other Parts of *Europe*, and is universally found in a light dry Soil.

In our Gardens it will require little Care more than the first planting. Let a Piece of a Border be chosen open to the Morning Sun, and shelter'd from its full Beams at Noon, as well as from cold Winds.

Let the Mould be dug out two Spades Depth, and dry Pasture-Earth, without any Mixture, put into its Place. Scatter over the Surface a little of the common Garden-Mould, to colour the Place like the rest of the Ground, and plant some parted Roots at two Foot Distance.

The best Season for this is the End of *September*. They will need afterwards only to be kept clear from Weeds, and at Times water'd, and they will flower a great Part of the Year.

As the Roots encrease fast, they should be taken up once in three Years, and parted; and at this Time the Mould should be dug out of the Border, and fresh put in its Place. Thus they will continue in Vigour, otherwise they will run into vast Tufts, and produce Abundance of Stalks, but few fine Flowers.

If Roots are not to be had, the Seeds will shoot very freely. The best Season of sowing them is *August*; and the Plants, being left at two Foot Distance, when the Bed is dress'd in Spring, will flower the succeeding Season. If the Stalks of those which flower earliest be cut down before the setting for Seed, others will rise, and continue the Succession a long Time.

CHAP. II.

The Care and Management of the Flower-Garden.

THE Auriculas will now be promising their Bloom very speedily, and they must be treated with great Attention.

Where there are Slips fit for taking off from the Mother Plants, let that be done this Week. There must be Care taken not to disturb or injure the Mother Plants, and they will be the stronger for this Removal, the Roots having less to nourish.

Fill as many small Pots as there are Slips, with the Compost we have directed to be us'd for the Auriculas; and plant carefully in each one Slip.

Let them be planted immediately as they are taken off from the old Plants, and let them have a gentle Watering; they should then be set in a shady Place to root.

The best Time of doing this is in the Evening of a cloudy Day, and they must be water'd every other Evening till they are rooted.

Those which have most Fibres will succeed best; and if they are found not to take kindly, it will be proper to set the Pots in a Hot-Bed

Frame, and nurse them with the same Care that is taken of tender Exotics; covering the Glasses with Mats till they are well rooted; and then they must be by Degrees accustomed to the open Air.

This Care is very well worth taking of the Slips of the finest Kinds; for when once rooted there is no Danger of their thriving.

If there be any Part of the Garden where Evergreens are wanted, let them be brought in this Week, chusing for the Purpose the Evening of a cloudy Day. They must be planted immediately on taking them up, and the Success will then depend on two Things, The keeping the Mould in a due Degree of Moisture about their Roots, and defending them from the Sun and parching Winds.

Let a large Hole be open'd for each, and the Earth very well broke in its Bottom. Let the Tree be brought with a Ball of its own Earth, and before it is set in, let a good Quantity of Water be pour'd into the Hole; and the loose Mould at its Bottom well wetted and worked up with

April. with it: then set in the Tree, fix it carefully upright, and it will be easily settled among the wet Mould of the Bottom. Throw in the rest carefully; and when the Roots are well covered, and the Mould is brought to the common Level, raise some more round about it, at a Foot and half Distance, so as to make a kind of Basin to detain the Water, and give a good Watering, by a little at a Time. Then throw a Quantity of Pease-straw over the Place, and once in three Days repeat the Watering.

Some Weeks ago we directed the putting some Tuberosé Roots into a Hot-Bed, to forward them for the earliest Flowering: this Week it will be proper to put in some more, treating them in the same Manner: they will come into Flower as the others are going off, and by this Means there will be a Succession of them for a very considerable Time.

Look carefully to the Annuals in their Hot-Beds, and by Degrees inure them to the Weather. Every tolerable Day admit the Air to them about Noon, according to their Strength and Condition, and drawing up the Mould to their Stem.

The Gardener should keep continually in his Mind the whole Intent of his Work: these Plants are to be strengthened to bear the open Air, and the sooner that is begun the better. If they be kept too close, they will draw up weak and ill-shap'd; but the more Air is admitted now, and the more their Stems are strengthen'd, the stronger they will be, and fitter for their intended Places.

This needful Care taken for future Time, the Gardener is to consider what is immediately approaching. The Ground has been in a Condition of little Value to the Owner, and the Season has permitted him to make scarce any Use of it for many Months, but a better Time is approaching:

the mild Weather will call him out to walk, and the Spring Flowers entice his frequent Visitation. April.

For this the Labour of the Autumnal Plantation has been employ'd in the Borders; for this, the Seedlings of many Years rais'd in their separate Beds: they will now repay the Labour. The hardier Flowers will open in the common Borders, and the *Ranunculus's* and *Anemonies*, the *Hyacinths* and *Tulips*, the *Auriculas*, and the whole Glory of the Spring, will be in Flower, or in the immediate Promise of it.

Let all be now clear'd and put in Order, that the Proprietor may enjoy them.

The Borders should this Week have a perfect Cleaning, not the Rudiment of a Weed should be left: the decay'd Leaves that may hang about the Roots should be taken off. Let the Mould be drawn in carefully about the Heads of the Roots, and the rest rak'd and laid level. Probably the Spring Showers will supply the farther Care of Watering, if not, let it be done every Day.

Let the Beds of choice Flowers be kept perfectly clean; and let them still have the Shelter of their Mats at Night.

This done, and all prepar'd for the Eye of the Proprietor, let the next Care be for his Feet. Let the Gravel-Walks be well roll'd, and especially after Rain, that the Whole may bind. Those that have been broke up for the Winter will particularly require this Care; for they will not at the first Laying get that Hardness which is necessary for walking with Satisfaction.

The frequent Mowings of the Grass must be continued; and a careful Eye must every Day or two be carry'd thro' the whole Ground, to keep Things in the neat and perfect Order wherein we have from Time to Time directed them to be put.



SECTION II.

The Management of the NURSERY, for this Week.

IF there be any of the Evergreens that were to be transplanted this Season, yet left in their Places, this is the last Opportunity the Gardener will have for removing them; and he must atone for his Neglect hitherto by more than usual Care of them.

The Work must be perform'd in an Evening, and with great Expedition. The Holes must be opened for them before they are taken up; and the Bottom wetted to receive them immediately as they are brought from their Bed. The Ends of the small Fibres must be snip'd off just as they are put in; and they must be secur'd from Danger by repeated Waterings.

This is a very good Season for propagating the finer Kind of Hollies, by Grafting. They are to be grafted upon the common Holly-stock; and about five Years is a good Growth for the Stock. According to the Season this Work may be perform'd, either now, or a Fortnight or three Weeks

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sooner; but in such Seasons as the present, it is best at this Time.

Let the Trees grafted last Season be now carefully look'd over. They will not grow so perfectly as Shoots from the natural Stock; and we have told the Gardener before, that the weaker the Growth, the more is the Danger from Insects, which at this Season are very pernicious. He will in many Places find the Leaves curling up, and the Buds looking blighted: there is just Time for him, upon this Notice, to save them. Let him sprinkle them with that Infusion of Soot and Tobacco which we directed, and repeat it daily till the Insects are destroy'd. He will soon see where it takes Effect, and where it does not.

Wherever he sees a Bud or Cluster of Leaves too far gone for Recovery, let him take them off; and the Place being wash'd with the same Liquor, the Infection will be stop'd from spreading.

Let a careful Hand be employ'd to weed the

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April. Autumnal Seed-Beds of Trees and Shrubs. The young Trees will in many Places begin to appear, and they will be choak'd by the wild Growth if not carefully clear'd. Let the Person employ'd in this be made perfectly sensible of the Form of the young Trees, that none of them may be destroy'd in the Weeding.

When the Ground is clear'd and loosen'd, as it always is by taking up Weeds, let there be a gentle Watering every other Day. The Gardener will be surpriz'd at the Effect of this timely Dressing; a Week will shew a hundred promising Shoots, where there were not at first half a Dozen.

Some of the Pines which do not rise favourably from Seeds, may this Month be propagated by Grafting. The common and simple Method is not to be us'd on this Occasion, but that call'd *Grafting by Approach*, and by some *Inarching*. To this Purpose, the Stock and the Tree which has the Bud must be so near, that the Parts to be join'd may be brought to touch one another.

The Stock being some of the common hardier Pines, may be rais'd any where; and as the Tree from which the Graft is in these Cases to be taken, is naturally in a Tub or Pot, that may be brought to it without Difficulty.

Let the Tub be brought so near, that a convenient Branch of the Tree to be grafted may be brought down, so as to touch the Stock near the Ground. Mark the Place where it easily joins in this Manner; and having every thing ready, a Knife for the Purpose, some Bafs wetted for the Tyeing, Clay for covering it in, and Stake for tyeing it up secure: chuse a cloudy warm Day, and thus begin the Operation.

Pare away the Bark and Wood at the Place mark'd on the Branch, to the Length of three Inches: bring it down to the Stock, and mark with a Knife the exact Place where it will join: cut away the Bark and some of the Wood for that Space; Readiness and Care are the great Articles for this Work: the two Parts must be made to suit one another, and no Time must be lost in doing it.

Cut a little Tongue upwards in the Branch, and make a Nick in the Stock to admit it: this serves for fastening them the more securely. Bring the two cut Parts together, fix the Tongue in its Nick, and lay them even, that there be no Vacancy between in any Part; then draw round

the wet Bafs gently, but securely; and by repeated Tyeings keep the two cut Parts close together: mould some of the Clay in the Hands, and lay it carefully on: close it about by frequent pressing; wet it on the Surface a little, and about the Edges, that it may fall perfectly even, and then cover this first Coat with a second, carrying up the last Covering beyond the first. Thus it will close all, and the Air will not easily crack it through.

The covering up of these grafted Parts is of the same Nature with shading the Beds of new planted Exotics. All is kept quiet; and the Roots in one strike just as the Fibres unite in the other. If the Air gets in, nothing is done perfectly.

When the Clay is putting on, let the Stake be thrust carefully into the Ground, just at the Place, so that it will come close to the united Part. Let it be very firm in the Ground; and when the Clay is so well clos'd that no Air nor Moisture can get in, let the Part that is thus united be brought close to the Stake, and ty'd above and below the Place with a good Quantity of Bafs. It must not be pinch'd in either Part, but it must be in both Places bound firm; and this may be easily done when there is a sufficient Quantity of the Tyeing allow'd.

In this Manner let all stand till the latter End of *August*; and the Parts will be so well united, that the Graft may be cut from the Mother-Tree.

It is to be done in this Manner: a sharp Knife must be us'd, and it must be taken off with a Slope close to the Stock; then the fresh cut Part must be again covered with some of the Clay. The Growth will be regularly carry'd on, and the Parts unite inseparably.

We advise that the Stake be left in for a considerable Time, and the Parts bound to it; for the Danger is not soon over that might come from Winds: but with this Precaution and the common Care, the Prospect of Success is very fair, and the Tree rarely fails.

Many of the tenderer Greenhouse Shrubs may be propagated by this Method of *Inarching*; but they have prostituted the Intent who use it for the fanciful Purpose of producing Fruit on Seedling Plants, as has been done in the Orange and Lemon Kinds: the Thing is unnatural and the Tree commonly dies.

S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

IT is some Time since we have comprehended all that relates to the Fruit-Garden, each Week, in a single Chapter; but we shall soon begin again the original Division; giving a List of the Products before the Management of the Trees and Ground. Hitherto, the Accounts of late Autumn only could have been continued, dropping one after another many of the Articles.

We have instructed the Gardener at the proper Season, to preserve such of the Fruits as could serve the Table and the Kitchen in Winter; they are now nearly exhausted; and Nature does not afford yet any Supply: but in this intermediate Time comes in the Assistance of Art; and there may now be had some of its Products in this Kind.

April.

C H A P. I.

April.

Fruits artificially ripen'd now in Season.

WE have directed the Gardener to plant some of the common, and some few of the *Chili* Strawberries, in Hot-Beds, for an early Produce; and taught him to avoid the common Misfortune of their Blossoms failing without succeeding Fruit.

He may this Week gather his first Produce in the common Kind certainly; and if he have had good Luck, as well as taken due Care, he may embellish them with one or two of the others: at the worst, a Plate of Strawberries is now an agreeable Sight, and they will have all their Beauty this Way, tho' not the true Flavour: to that the Air is necessary, but not to the swelling of the Pulp, or regular Figure. They will be pale, but in that there is nothing unpleasing; and if any of the *Chili* Kind ripen, those will have their Colour.

A Plate of these, ornamented with Leaves from the natural Strawberry Beds, and crown'd with if but one of the large *Chili* Kind, will give an Air of Summer. They must be gather'd about an Hour before they are eaten, that the Warmth of the Air in the Bed may go off, and they may yet retain all their Fulness; and it will improve their Flavour greatly if a very small Quantity of treble refin'd Sugar, beat to fine Powder, be sprinkled over them just as they are sent in. This will not be perceiv'd by the Eye, nor particularly distinguish'd by the Taste, but it will give the

raw Juice, in these artificially ripen'd Strawberries, that Richness and Mellowness it otherwise must want.

We have hinted to the Gardener before, how much his Credit may be rais'd by a right Management of gathering and sending in his Fruit, and shall not leave him uninform'd in any Article.

With these Strawberries from the Hot-Bed, he may send in, from the forcing Frames, Apricots and Cherries. This little Desert will please, because of the early Season, beyond all the Pomp of Summer.

The Apricot, for this Purpose, is that naturally early Kind call'd the *Masculine*; a small round Fruit of a brownish Colour, and with but little of the true Flavour of the finer Kinds.

There is another which succeeds this Way; the transparent yellow, much preferable, but it requires more Attention. The *Masculine* naturally loses a great Part of its Blossoms; and the transparent is liable to the same Imperfection: they have the less Chance to escape in this unnatural Manner of bringing them forward, but the Value of an *April* Apricot makes Amends for the Pains.

The Cherries for this Purpose are of the *Duke* Kind: and it must be own'd that neither these nor the others have any thing like the true Flavour: but three Kinds of Fruit at such a Season, if they are but eatable, make a great Appearance at a Table.

C H A P. II.

The Care and Management of the Fruit-Garden.

LET the Gardener this Week look over all his Vines that are planted in the usual Manner against Walls: they will be now making their Spring Shoots; and, unless prevented, will waste a great deal of that Nourishment, intended and wanted for the Fruit, in useless and hurtful Branches.

All those Shoots which rise in wrong Places should be rub'd off; and let him see where two are produc'd from the same Bud, that he may rub off one: the strongest must be left; and by this Method, thus timely us'd, all the Nourishment will go where it should, and the Fruit will be fuller and forwarder.

This last is an Article of the utmost Consequence, in Respect of Vines; for there are few Years when Grapes ripen favourably: the forwarder they are, the better is their Chance. The Branches being now laid close to the Walls, the bad Wood clear'd away, and nothing more left than will be useful, the Juices will all be deriv'd to the right Place, the Sun has its full Power, and nothing will be wanting that our Climate can give for the ripening of the Fruit.

The Peach, Nectarine, Apricot, and other Wall Fruit-Trees, are now coming forward apace, and

they must by all Means be encourag'd. On the Strength and Fulness of their Bloom will depend the Quantity of the Fruit; and even the Leaves, if stinted in Point of Nourishment at this Time, will be infected with Insects.

The great Point is to keep their Roots in a vigorous State of Growth, and the Ground, where they run, in a Condition to supply them. It must be neither exhausted by other Things, nor left to grow hard and impenetrable.

We have told the Gardener, that all Earth of that he is concern'd with, grows hard and heavy by lying; that his Culture breaks and mellows it; and that as soon as it is left, it grows by Degrees hard, and close again. We have told him the Advantage of breaking it about, and among the Roots of growing Plants, and these are the general Rules upon which his Practice now is to be founded.

He has at the due Season prun'd and nail'd his Trees, and dress'd the Ground wherein they grow: let him now once more break it: Weeds will rise in it, and the Trees must be so much the worse supply'd for all the Nourishment they draw: therefore let the whole Borders wherein they stand, be dug up with a three-tin'd Fork, as we have directed

April. directed on a former Occasion, and the Mould thrown up loose : this roots up all Weeds, breaks off the extreme Ends of the small Fibres of the Roots, and gives them a fresh Mould wherein to spread those innumerable Shoots of new ones they send out on this Occasion.

When the Mould is thus broken, let the Gardener sprinkle on a small Quantity of Wood-Soot, about a Quart to as much Ground as holds six Trees; then let him break all with a Rake; take off the Weeds, and lay it level. Thus will the small Quantity of Soot be spread equally, and wrought in with the Mould, and the Rains will wash it to the new shooting Roots.

If no Showers happen, for this Purpose, the Ground must be water'd once in three Days. The Trees will shew the Effect of this in their vigorous and lively Aspect, the Bloom will set the better, and the Fruit will be the finer.

Let not the unpractis'd in Culture, suppose the

Taste of the Soot will be convey'd to the Fruit : April. this cannot be, but the Spirit of it certainly will; and it is wonderful how much this particular Manure, thrown in at this Time, assists the Purpose.

To compleat this Work, the Gardener should dig up more than the Border wherein the Trees stand. Their Roots spread far. If a Gravel Walk terminate the Border, and there be cultivated Ground on the other Side of the Walk, let this, if it can, be dug up; at least, let a little Soot be sprinkled over it, and rak'd or dug in with a Trowel.

I have found, upon a careful Observation, that those Borders at thirty Foot Distance from the Tree, will be full of mossy Fibres, which are the Extremities of some of its Roots; these are ready to imbibe Nourishment; and often the Tree depends very much upon them. Therefore this cultivating and enriching the Ground, wherein they run, cannot fail of having the greatest Advantages.

S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

WE shall now begin to recount the Products that come fresh into Season here as in the Fruit Kind, and renew our Division into

two Chapters. The Winter Products are in a Manner gone, and the Spring now gives new ones.

C H A P. I.

Products in Season.

THE Winter Carrots now give Place to the fresh, young, and juicy ones of Spring. Those of our Autumnal Sowings may now be drawn, and will be found in full Perfection. Sprouts of Broccoli will be in Perfection, and

young Turnip-Tops, of which many are fond. There will be *Dutch*, Cabbage, and some Cos Lettuce; Spring Salleting in Abundance; and, from the Hot-Beds well manag'd, some Cucumbers in perfect fine Order.

C H A P. II.

Culture and Management of the Ground.

THIS Week the Gardener must prepare his Ridges for Cucumbers and Melons that are to be rais'd under Bell-Glasses: let him not spare Dung, much less Labour, for this will always be very well repaid.

The Quantity of Dung must be proportioned to the Number of Holes intended; and the best Proportion I have found, is a Load to every five Holes: this must be thrown up with some Ashes, as we directed for making the Hot-Beds; and when it has lain a Week it will be fit for Use.

Count the Glasses intended for one Row, and mark out a Trench as many Yards in Length as there are Glasses, with the Allowance of their Breadth; for the best Way of putting them is at a fair Yard Distance. The Width is to be two Foot nine Inches. The Plants are now vigorous, as we directed them to be rais'd; and having their rough Leaves, they are ready for this Planting. Let the Depth of the Trench be five Inches; and, if in a moist Soil, less.

Throw in the Dung, and spread it in as in making a Hot-Bed; lay the Top even, and level the Sides; then measure the Distances for the Holes, and in each Place lay in a Basket of Earth fresh from a good Heap of rich Mould, stick up a Stake in the Middle, and set on the Glass.

This done, cover the rest of the Ridge with the Mould that was thrown up in making the

Trench; and if there be not enough of this to give it a Coat three Inches thick, bring on some more to compleat the Covering.

Let the Glasses remain fifty-six Hours upon the Bed, then bring in the Plants.

Place two for each Glass, levelling the Hill of Mould at Top; and when they are planted raising a Ridge of Earth, like a Basin, to hold Water.

Shade them till they have taken good Root, watering them gently at Times; and this must be continued till they have acquired good Strength, and spread luxuriantly.

When a large Quantity of Melons and Cucumbers is intended to be rais'd this Way, many of these Ridges may be made in the same Manner: their Distance should be five Foot from one another, and the Management of the Plants entirely the same.

Let the Gardener now put in another Crop of French Beans into the natural Ground. He must chuse a warm and sheltered Place, and guard the young Plants when they appear, from Slugs and other Devourers. There is no kind of Crop that so much requires these frequent Sowings, and this for many Reasons. None is so apt to rot in the Ground, none is in such Danger of being devour'd as soon as the Plants appear, nor is there any which will come so acceptably to Table in repeated fresh Growths.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XXXIII.

For the first Week in *MAY*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and curious Plants now in their Perfection.

I. BLOOD-RED ANEMONE.

May.
Pl. 33.
Fig. 1.

WE have told the Gardener, on a former Occasion, that Nature affords few distinct Species of the Anemone; and that the Variety he sees, like that he raises by his own Application, is the Effect of happy Culture. Nature is herself very luxuriant in this Kind of Plant.

The little wild Anemony that shews its milky White, or lightly blushing Flower in our Woods and Thickets, has often more than its due Number of Petals; sometimes it is absolutely double: no Wonder therefore that its Varieties are excellent and are unnumber'd, when every thing that can contribute to feed this natural Luxuriance is given to it. When only Seeds of finest Flowers are sown; when Composts suited to its Nature, but enrich'd far beyond what Nature ever gave, are allow'd to it; and Warmth and Shelter, and Defence and Sun, when needful, are given it, Year by Year, with an unwearied and diligent Hand: hence have arisen the various Improvements of our Artists, Flower exceeding Flower; and hence they will rise innumerable: because from better Flowers the same Art will yield still richer Improvements.

We have told the Botanist how many rise from the common Stock of the fine-leav'd Anemone,
Numb. XXXIII.

and this is one of them. Fantastic Gardeners have call'd it the *Princess*, and the *bleeding Princess*, Names not to be repeated but in Derision. It departs little from the original Plant, except in the glorious Red with which it is colour'd, and in the Firmness of the Stalk; and is the Kind call'd by common Writers, *Anemone tenuifolia flore rubro*: by LINNÆUS, and the more Correct, *foliis radicalibus ternato decompositis, involucro folioso*: Anemone, with the Bottom Leaves subdivided by Three's, and with a leafy Involucrum.

The Root is thick, irregular, brown, and hung about with innumerable Fibres.

The first Leaves are large, and plac'd on a divided Rib; they are cut into a Multitude of small oblong Parts by Three's; and are in Colour of a fresh and lively green.

The Stalk is thick, firm, a Foot high, tolerably upright, of a pale green, freely stain'd with a purplish Red; and a little above its Middle grows one leafy Substance. This is of a deeper green than the Leaves which rise from the Root, and is divided into many Segments in the same general Manner, but with less Regularity.

At the Top of the Stalk stands one Flower, large and conspicuous by its bright and glowing Colour. 'Tis of the Bigness of a single Rose; in

May.

May. Colour of the strongest bloody Red; and in the Centre vary'd with a Number of yellow Buttons, plac'd on slender Filaments.

The Petals in the Flower are six, and they are dispos'd in two Series, three in each: they stand fully expanded; and tho' they want the rich Lustre of the double Kinds, have yet very considerable Beauty.

There is no Cup. The leafy Involucrum on the Stalk, tho' so remote, is of some Service in the Defence of the Flower, and is all Nature has given for that Purpose.

We have told the Botanical Student he is to trace those numerous Filaments, which appear in the Centre of the Flower, to their Infertion, in order to know the Class of the Plant. He will find them independent of the Petals; and there is no Cup from whence they should proceed: they grow from the Receptacle of the Flower; and the Plant is one of the *Polyandria*.

Among these rise many pointed Styles, from so many Rudiments of succeeding Seeds: this shews it to be of that Order which comprehends the *Polygynia*.

The Seeds follow in a naked Cluster.

Culture of this ANEMONE.

It would be vain to give a Rule for raising this particular Anemone. It is a feminal Variety of

the common fine-leav'd Kind; and the Gardener who sows the Seeds from a good Flower of that Plant, will find this among others. If he miss once, he must repeat the Sowing, and select the Seed the next Time from a Flower that has a good red Colour.

Those Seedlings, which, when they flower, shew the true bloody Tinct, must be planted out separate; and to the common Compost, in which we have order'd this Plant to be rais'd, there must be added some very old Cow-dung, in a larger than ordinary Quantity. They must be set at a Foot Distance; and every Year, when the Leaves are decay'd, they must be taken up in the usual Manner; and, when planted again, it must be in fresh Ground of the same Kind with the first.

This will preserve their Beauty in its full Lustre; and they must be increas'd only by parting of the Roots. The Seeds sav'd from the finest of them we shall direct to be sown; but they are for another Purpose: they will raise nobler Flowers, and the Produce of the same with that from whence the Seeds was sav'd, would be altogether uncertain: therefore let the Gardener, for this high stain'd single Flower, afford every Year a fresh rich Bed of Compost, and part the Roots, when they are so well increas'd as to bear it: Preserving the Flower in its original Lustre, for its own Sake, and for that of many Kinds to be rais'd from its Seeds.

2. LOW STAR OF BETHLEHEM.

Pl. 33. This is a very elegant Plant, so well adapted to our Climate, that little Culture serves to raise it; and it has so much of the Aspect we see in those of our own Growth, that it gives a pleasing Variety among the nobler Kinds.

Fig. 2.

Its Roots, when thrown by Chance out of Gardens, will take their Growth so freely among the Grass, or under the low Hedge, that it has been esteem'd by some a Native of our Country: this, however, is an Error; and 'tis not in those Places the Flower shews its true Beauty.

The old Writers all have known it; they have call'd it *Orinthogalum vulgare*, *Orinthogalum medium*, and *Orinthogalum majus*. Common is no Addition for this Distinction; and the Judicious see in this Instance, how ill adapted Terms they are which only denote Bigness. The same Plant may be, as this is, large in Comparison of some Species of the same Genus, small to others, and in the general of a middling Size.

LINNÆUS names it after another Manner, *Orinthogalum floribus corymbosis, pedunculis scapo altioribus, filamentis emarginatis*: Corymbose-flower'd *Orinthogalum*, with Footstalks rising above the main Stem, and with nip'd Filaments. A Name distinguishing the Plant from all others, and conveying a Description.

Some have call'd it *Umbellate Star of Betlehem*: it is the same Meaning these would convey, that

LINNÆUS gives in the Term *corymbose*; but the Word *umbellate* is amiss: the Flowers of this Kind grow in short Tufts or Clusters, not in long Spikes, as those of many others of the same Name; but these Tufts are not Umbels, for the Footstalks rise one above another, not from the same Point.

The Root is a Bulb, somewhat oblong, of a whitish Colour, full of a slimy Juice, and of a bitterish Taste. Usually there are three or four smaller Bulbs about the principal, for the Plant propagates itself this Way abundantly; and from the Base run many thick white Fibres.

The Leaves are numerous, and in themselves not destitute of Beauty: they are long, narrow, obtuse, and of a firm and somewhat fleshy Substance: they spread themselves in various Forms, upright, procumbent, strait, bent, and drooping. Their Colour is a most perfect and strong green; and along the Middle of each runs a conspicuous Line of milky white.

Among these rises the Stalk, more upright than the Leaves, but not exceeding them in Length: it is six or seven Inches high, round, firm, erect; whitish toward the Ground, elsewhere of a pale and pleasing green.

The Flowers crown it in a considerable Cluster, each plac'd upon its separate, long, and slender Footstalk, and the uppermost of these rises considerably above the Top of the Stem. There are

May. no Leaves, properly so call'd, upon it; but at the Base of each Footstalk of the Flowers, there is an oblong fleshy Substance; a kind of bastard Leaf of a greenish white.

The Flowers themselves are conspicuous, more by their milky Whiteness than their Size, tho' the whole Cluster is not little. 'Tis only their Inside that has this plain Colour; for on the Back they have on each of the Petals a broad Rib of green.

The Student will examine the Flower with a more strict Attention, and he will find his Trouble well rewarded.

There is no Cup. It rises with a plain Base immediately from the Footstalk, and is compos'd of six oblong, pointed, and moderately broad Petals.

The Filaments are six, and they are of a singular Form, broad at the Base, and alternately nip'd at the Top, so that the Point appears trifid, and the Button supported on the Middle Piece. This is a very singular Structure.

In the Midst of these rises a single Style, crown'd with an obtuse Top; and the Seed-vessel which follows is of a rounded Form, divided into three Cells; with a columnar Receptacle, and many roundish Seeds.

The six Filaments shew the Plant one of the *Hexandria*, and the single Style one of the first Section of that Class, the *Monogynia*.

Culture of this ORINTHOALUM.

We shall bring the Reader acquainted with *Orinthoalums* that demand a careful Management; but we have said before, the Culture of this is easy. 'Tis in our Gardens however too much neglected, and we shall shew our Pupil how, with a very little Trouble, he may give it an Appearance very much above what is usually seen.

It is, if not of *England*, a Native of Parts of *Europe* as cold: *Germany* abounds with it; and it flowers with vast Perfection in many other of the Northern Nations: universally it is found where there is a rich black Soil, and some Shade. Let this give the Rule for their Culture.

Let the Gardener mix up two Barrows of black Mould, from under the Turf in a Meadow, one Barrow of River Mud, and a Bushel of old Wood-Pile Earth: this will be rich, and will

preserve, as well as feed the Roots. Dung, which is commonly in the Mould where they are planted, destroys them. Let these Ingredients be well mix'd together, and expos'd to the Winter's Air; and that of the first Months of Summer.

In the Beginning of *July* let the Gardener chuse a Piece of a Border, open to the Morning Sun, shaded from Noon, and shelter'd from cold Winds. Here let him dig out the common Mould, and put in the Compost.

Let him draw Lines lengthway and a-cross, at eight Inches Distance; and in the Centre of each Square plant a good Off-set from some well-established Root. Let the Roots be taken up for the Purpose, and the Off-sets planted immediately after they are separated. Open a Hole for each with a Trowel, and cover them two Inches above the Crown.

These planted for an immediate Stock, let there be sown in *August* upon the same Bed, near the back Part and Edges, and at a Distance from the planted Roots, some Seeds sav'd with Care from a flourishing Plant. They must be scatter'd lightly on the Surface, and cover'd with a Quarter of an Inch of the same Mould sifted over them.

Those who are nice may do this on a separate Piece of Ground in the Nursery; but as the Situation is well chosen, and the Soil adapted here, the young Plants will be easily manag'd with the others, and they will make no unpleasing Appearance.

The next Spring the Off-sets will most of them flower; and the following Season more strongly. The Seedlings will be taking their Growth at the same Time, and they will need only the common Care of being thin'd where they are too close, weeded and water'd with the rest of the Bed; and at Autumn to have a light Covering of fresh Mould sifted over them. This will strengthen the Off-sets for Flowering, as well as nourish the Seedlings; and after three or four Seasons the young ones will flower.

A fresh Parcel of Compost must be got ready in the Middle of *July*, and all the former dug out. The old Roots must be planted in other-Parts of the Ground, and the finest of the Seedlings set in the Bed at the same Distances as were allow'd to the other Roots: these will flower in the utmost Perfection.

3. DOUBLE CRIMSON ANEMONE.

Pl. 33.
Fig. 3.

This Child of Culture, and worthy Favourite of the Gardener's Fancy, is the Offspring of the Blood-red Anemone we just describ'd: 'tis therefore we have plac'd it near; and it has the same Merit with its Parent Kind of early Flowering.

Tho' a double Anemone, and a very elegant one, it is hardy: little Culture serves to raise and to continue it in Beauty, and it will flower in the most unfavourable Seasons.

'Tis not at Random we declare it the Offspring of the single Blood-red Kind; we have ourselves rais'd it from the Seeds of that Flower; and that in its full Beauty.

Gardeners have call'd it the Double Red, the Early Red, and the Double Princess; but these vague Names deserve little Regard. The Stock from which it is rais'd is the common fine-leav'd Anemone, and thither the Student must refer it.

The

May.

The Root is brown, thick, irregular, whitish within, and hung with many Fibres.

The first Leaves are divided, in a ternate Manner, into numerous small Segments, and their Colour is a fine fresh green.

The Stalk is round, weak, and six or eight Inches high, rarely much more: its Colour green, stain'd lightly with red, especially in that Part near the Ground. The Middle of this Stalk is adorned, as in the others, with the leafy Involucrum: this surrounds it at the Base, and is divided irregularly, in the same ternate Manner as the Leaves, into numerous small Segments of a paler green.

The Top is loaded with a large and heavy Flower, too much for its perfect Support. It naturally droops a little, and it is extremely pretty.

Six Petals, dispos'd of two Series, compose the outer Part, as in the single Kind; and they are in Colour of the most delicate Crimson: not of the full Blood-red of the other, but of a fine glowing though tender Colour, diversify'd with Streaks of a more perfect red, and of white.

In the Midst stand smaller Petals, altogether innumerable: they are oblong, pointed, and of a very pleasing Colour, deeper than the outside Petals, but of the same kind of red; and ting'd in different Degrees with greenish and whitish. They stand in a great many circular Series, filling up the Body of the Flower; and they compose a large half rounded Body. The three innermost are erect; the several surrounding Series, except the two or three outer ones, are convergent; and these last spread themselves out upon the Bases of the other Petals.

The Characters of the Flower are the same with those of the plain and single Kind, to which it owes its Origin: the Filaments are often obliterated from the vast Multiplicity of the Petals.

Culture of this ANEMONE.

The raising of this, which is one of the hardiest of the Double Anemonies, will lead to the Culture of the more elegant and specious Kinds, of which we shall speak in a succeeding Number; for the Practice will be in general the same, tho' more Care is requir'd for the raising those more tender Varieties.

In the Season of the Blood-red Anemonies flowering, let the Gardener look over his Plants, and mark for Seed those which have the largest and deepest-colour'd Flowers, the firmest Stalks, and in general, the best Aspect of Health and Vigour.

Let him forward the ripening of these Seeds, by watering at Times, and by breaking the Mould about the Plants with a Trowel.

When full grown and a little harden'd, let him cut them off, and lay them on a Shelf in an airy Room; and when they begin to fall from the Head, let him shake them off entirely, then spread them separate to harden; and after a few Weeks lying thus, tye them up in Papers, to be ready for Sowing.

Mix up a Compost thus:

Put together a Load of Pasture-Mould, taken from under the Turf in a hilly Place, and not too rich, and a Quarter of a Load of old rotted Cow Dung: add to these three Bushels of Wood-pile Earth, the same Quantity of Pond Mud, and the same of large, coarse, but clean Sand: it should be either River Sand, or Pit Sand wash'd, by pumping upon it till the Water runs off clear.

Let this be put together in Autumn, and turn'd two or three Times during Winter, that it may be ready for the sowing of these Seeds the following *August*.

Chuse a Spot in the Nursery that is open to the Sun from its rising till toward Noon, but not to the full Blaze of the Middle of the Day: let it be in a rising Part of the Ground, and digging out the Mould throw in this Compost.

Level the Surface, and then prepare the Seeds for sowing, by mixing them with a Quart of the Mould dry'd a little, and rub'd to powder.

Rub the Seeds well among this between the Hands, and in a still Evening scatter them evenly over the Ground. Sift upon them a Quarter of an Inch of the Mould; and throw a few Pieces of loose Hawthorn Bushes to defend the Place from accidental Injuries.

If the Weather be very dry, give them once in a Week a slight and careful Watering: this must be done with a Pot that has very fine Holes; and it must be held near the Ground, and moved swiftly: if the Bed be water'd carelessly, half the Seeds will be wash'd out of the Ground.

In the Beginning of *October* the Plants will appear, and they will continue coming up several Weeks. Let the Bushes be lifted off, and the Weeds very carefully pulled up by Hand; then lay on the Bushes again; and when the Frosts grow sharp, let a Mat be drawn over the Bed every Night, and taken off in the Morning.

The young Plants will make some Progress during Winter; in Spring they must be weeded and water'd at Times. In this Manner they must be nurs'd till the following Year, and then in the End of *May* they must be taken out of the Ground. This is to be done by sifting the Mould, and the Roots must be laid to dry in the Manner of those of larger Growth when taken up after flowering.

Let them be kept out of the Ground till the End of *August*, and then planted at four Inches Distance in a Bed of the same Compost. Many of them will flower the following Spring; and almost all the Season after. There will be single ones in a great Variety of colouring from the deep Blood-red of the original Flower to white; and there will be several double ones of this true kind that we have described here. These must be mark'd, and when the Flowers are faded, and the Leaves grown brown, they must be taken up for planting the succeeding Autumn in the Beds.

May.

May.

May.

4. PAINTED AMETHYSTINE TULIP.

Pl. 32.
Fig. 4.

The Tulips like the Anemonies, innumerable as they are in our Gardens, are the Off-spring of a very few original Kinds. We shall describe some of the most singular, but caution the young Botanist against supposing them so many Species. This and a Thousand others will rise from the Seed of one of the good early Tulips, and it is one of the largest and finest of them all.

The earlier Authors have called it, *Tulipa præcox major*; it is named by many others, *Tulipa præcox Amethystina varia*: thus JOHN BAUHINE and TOURNEFORT have called it. It is one of the common Stock from the broad-leav'd Tulip, distinguish'd by LINNÆUS under the Name *Tulipa flore erecto foliis ovato lanceolatis*, upright flower'd Tulip, with oval Spear-pointed Leaves.

The Root is bulbous, of an oblong Shape, white within, and cover'd with a brown Membrane. The Leaves are large, broad, oblong, hollowed, pointed at the End, and of a pale greyish green, they are waved at the Edges, and they appear dusty.

The Stalk rises in the Midst of these, and is firm and upright, fifteen Inches high, of a pale green Colour, dusted with a grey Powder, and there are on it two or three Leaves perfectly like those from the Root, but smaller.

At the Top stands one Flower, large, and of a true and fine Shape, equal in that respect to most of the late Tulips, and superior to many of them in colouring.

The Petals which form it are six, and they are placed in two Series, three outer and three inner. The three inner ones are somewhat larger than the outer three, and are more perfectly colour'd.

They are dispos'd so as to form a kind of Bell, handsomely rounded at the Bottom, and in their Course upright, scarce turning at all outwards, or bending inwards.

There is no Cup to the Flower; it rises naked at the Head of the Stalk, but the Firmness of the Petals, and hollow'd Form of the whole, are very well calculated to preserve the Parts of Fructification without that Assistance.

In the Centre rise six Filaments, crown'd with very long and large Buttons of a brownish Colour; and in the Midst of them is placed a single Stigma of a triangular Form, and divided as it were into three Parts; there is no Style, but this is fix'd on the Top of the Rudiment of the Seed-vessel.

The Ground Colour of the Flower is a pearly grey, with a Tinge of faint crimson diffus'd all over it; and the whole Body, inside and out, is beautifully variegated with a deeper Tinct, with some Admixture of blueish. This is the true Amethystine Colour, it is dispos'd in Stripes, Streaks and Blotches, with a very pleasing Irregularity. The Stripes are broad, and they begin from the Bottom of the Flower, and are continued to the Top: the Streaks are slenderer, and lose themselves at a small Distance from the Top; and the Blotches which are oblong, waved, and clouded, lose themselves in the same Manner, at a small Space from their Origin, which is principally at the Edges of the Petals, near their Top.

The six Filaments and single Style shew the Plant one of the *Hexandria Monogynia*. Its Culture we shall deliver at large with that of the other Tulips in our next Number.

5. YELLOW ASPHODELL.

Pl. 32.
Fig. 5.

A Plant well known in our Gardens, and very well deserving its Place in them; specious, and of easy Culture: bearing without Shelter the Severity of our worst Seasons.

The Botanists of all late Times have been well acquainted with the Plant, and they have agreed to call it by the same Name *Asphodell*, *Asphodelus*, to which they have added the Colour of its Flowers as distinctive from other Kinds, *Yellow Asphodell*. Some from its erect Form and golden Aspect, have named it *Hastula Regia*, whence the vulgar English Name, *King's Spear*, a literal Translation of that Term.

Others after CAMERARIUS make it the Female of the *Asphodels*, and name it as he does *Asphodelus fœmina*, but there is no Foundation in Nature for this Distinction.

LINNÆUS in the Place of these vague and arbitrary Titles, names it *Asphodelus caule folioso foliis fistulosis triquetris*; leafy stalk'd Asphodel, with three corner'd hollow'd Leaves. There are

Nº 33.

others of the same Genus, and we shall treat of them: this Name distinguishes the present Species from them all.

The Root is tuberous and yellow; it consists of numerous oblong Parts connected to one common Head, and hung with thick Fibres.

The Leaves rise in a vast Tuft, and are long, slender, and of a pale green, naturally greyish, often yellowish: they are angulated, edg'd, hollow'd, and sharp pointed.

The Stalk is a Yard high, round, firm, robust, and perfectly upright.

The Leaves are placed irregularly on it, and they are like those from the Root but smaller, and usually paler.

The Flowers are extremely numerous, they form a long and slender Spike, covering the Stalk from the Middle upwards, and surrounding it innumerable; Buds opening, full blown, and fading Flowers always clustering close round it together.

5 G

They

May. They are placed on short and slender Footstalks, and are in Colour of a pure Gold yellow. They rise without any Cup from the Top of the Footstalk, and each appears to be compos'd of six oblong, broad, and pointed Petals; but they are really Segments of one Petal, for the Base is entire, and the Flower comes off unbroken.

In the Base of the Flower appear six little Fibres, which rise from the Bottoms of the Segments, and form a little globular Protuberance. This the Student will know to be the Nectarium of the Flower, for he will see beside it the Petal, Filaments and Style.

The Filaments are six, and they deserve Attention, they are inserted into these Films which compose the Nectarium: they are smaller from the Bottom to the Top, arch'd, and of different Lengths, three longer and three shorter. Their Buttons are oblong, and very conspicuous.

The Style rises single in the Midst of these from a roundish Rudiment of the Seed-vessel, and is terminated by a blunt Stigma or Top.

The Student will distinctly read in these Parts the Class of the Plant, and its Place in the LINNÆAN System; it is one of the *Hexandria Monogynia*.

Culture of this ASPHODEL.

It is a Native of the warmer Parts of Europe, fringing the Margin of little Brooks, and hanging from the Sides of craggy Hills, where there is a light Soil, and some, but not too much Moisture.

This must be our Rule for propagating it; and very little Trouble is required. Let a Mixture be made of two-thirds light Pasture Earth, and one-third Pond Mud, add to half a Load of this a Bushel of rotted Cow Dung, and the same Quantity of Wood-pile Earth, and mix them well together; chuse a Spot in the Garden where the Morning Sun shines freely, and dig in this Compost.

In the Middle of *August* procure some parted Roots, and plant them at two Foot Distance, burying the Head half an Inch. They will require no Care but that which is taken in common of every thing in the Border; and they will flower the next Year. After this to keep them in Perfection, they should be every Autumn taken up, the Side Roots cut off, and fresh Compost put into the Place. They are then to be planted at the same Distance as at first, and they will thus preserve their full Vigour.

The Seeds which ripen freely in round fleshy Capsules, will grow as freely in the open Ground; but there is no need for the Trouble, the Plant is so common, and increases so fast by the Root, that enough is always ready for that Propagation; and there is no Advantage in raising it

from Seed, for it is not one of those Plants whose Flowers admit a Variety of colouring. May.

The Custom is to plant these parted Roots and those of other Plants in common Borders, without regard to the Soil, and to mix them among other Kinds: what we propose for this and for all other Plants which the Gardener would bring to Perfection, is to place as many Roots of them as will occupy a small Spot together; to dig out the Mould, and fill up that Part of the Border with their proper Soil; and to attend each with a Care and Management suited to its particular Nature. It is a new Plan of Gardening, but Reason declares it to be, what Experience under our own Eyes have shewn it, superior to all others.

The Plants of every Kind are certain to attain their full Perfection when each is thus treated as Nature directs; whereas in a promiscuous Border, where the most different Species are manag'd alike, one half must be drown'd with that watering which is not enough for the other.

Nature has given to each Plant its appropriated Soil: the Gardener plants them all in one. His common Mould is as ill adapted to the greater Part as any Composition that could be imagin'd. Dung has always a large Share in its Composition, and there are very few Plants which this will bring to proper flowering.

No Doubt can remain but that the Plants will be more perfect when each is rais'd in a Soil like that in which it lives, where Nature produces it; and where it has that Exposure, and that Degree of Moisture her invariable Law directs: that the Plants will be finer when rais'd in this Way, is known by all who have seen the Practice, and must be believed by all who read it. The only Question remaining is, Whether a Garden whose Borders are thus planted with Clumps of every distinct Kind, or one where the separate Plants are intermix'd, will be most pleasing to the Eye. Fancy must give the Determination here, but upon the most impartial Comparison it has appear'd to us that this Method is more pleasing.

We would not have a little Clump in a Grass Plat, planted entirely with one Kind; nor would we have it divided into regular Quadrants, Sextants, or Octants, for so many Species. Here Wildness is intended, and let it be preserved by the promiscuous planting; but in the long Borders of a Garden, Clusters of Plants thus in Health and Vigour, unknown to common Eyes, will vastly exceed the half starv'd promiscuous Plantation.

It must be proper once to name this, for our Rules for Culture imply it generally. We hope the practical Gardener who follows our Instructions, by this Time sees the Effect in many Instances.

May.

May.

6. GOLDEN PROLIFEROUS CROWFOOT.

Pl. 33.
Fig. 6.

There is not any among the various and elegant Effects of Culture that pleases more than the prolific flowering. It is an Exuberance of Nature so singular in its Kind, so agreeable to the Eye, and to the Imagination, that the most unaccustom'd to these Studies always see it with Satisfaction and Surprise. We have it in various Forms: in the prolific Oxlip, one Flower grows by its tubular Base out of the Body of another, and so it is in the *Datura* we lately described: in the small *Crowfoot* of one of our former Numbers, there rises a Stalk from the Centre of the double Flower, bearing another: so it is in this; and so we shall represent it in a succeeding Number under the Article Anemone.

The Student will see this *Crowfoot* an Exuberance of one of the double Kinds, and he will find it treated as such by some of the Botanical Writers who first described it; they call it *Ranunculus Asphodeli radice flore prolifero*, but that is an uncertain Denomination; for those of other Colours, and from a different Stock will have prolific Flowers.

The original Plant whence Culture raises this is of *Asiatick* Origin. It is the *Ranunculus Asiaticus flore aureo simplex*, of FERRARIUS: this, Culture doubles, and farther Management of the same Kind, raises to this Height of Excellence and Beauty.

LINNÆUS distinguishes the Species by the Name *Ranunculus foliis ternatis, biternatisque foliolis trifidis incisus caule inferne ramoso*, ternate and alternate leav'd *Crowfoot*, with the Divisions all the Way in threes, the Segments divided at the Edges, and with the Stalk branch'd in the lower Part. 'Tis a long Name, but this accurate Writer had Reason to make it such. The Species of *Crowfoot* are very numerous, and all the Distinction is requisite for ascertaining this.

The Root is tuberous and irregular; form'd of several oblong Pieces, with a few thick Fibres.

The first Leaves are numerous; they spread variously from one Head, some erect, and others on the Ground; they are differently divided according to their Growth and Size, but always into threes: the Segments are oblong, and notch'd at the Edges.

The Stalk is a Foot high, round, of a pale green, somewhat hairy, and tolerably firm. There are two or three Leaves upon it divided in the same Manner as those from the Root, and lightly hairy: their Colour is a pale green, and their Substance tolerably firm.

The Top supports a very large and elegant Flower of the Bigness of a common Rose, of a bright Gold yellow, and compos'd of almost innumerable Petals; from the Centre of which rises a slender green Stalk, an Inch and half in Length, supporting on its Summit a smaller Flower, perfectly resembling the larger.

The natural Colour is the plain bright yellow we have mention'd; but the same luxuriant Cul-

ture which swells the Flower to this Bigness, enlarges the Number of the Petals, and sends up this additional Off-spring.

In this State it is therefore a Creature of the Gardener's Industry; and we must refer the Botanical Student, who would trace its Characters, to the original and simple Flower: in that he will find them, as in the common *Crowfoot* of our Meadows.

The Petals in that are five; they are broad, obtuse, and connected to the Receptacle by narrow Bottoms; and at a little Distance above this Bottom, there is in each a small Hollow; this is the Nectarium of the Flower. In the Centre stand numerous Filaments, crown'd with oblong Buttons, which appear double; and in the Midst of this Tuft are numerous very small and reflex Stigmata; these have no Styles, but adhere to so many Rudiments of Seeds.

The Filaments being numerous, must be trac'd to their Origin, to find the Class of the Plant: they are inserted on the Receptacle, and we thence know it to be one of the *Polyandria*. The numerous Stigmata shew it one of the *Polygynia*.

Culture of this RANUNCULUS.

So many Accidents must concur to the Production of this Flower, and many of them so perfectly unknown to the Gardener, indeed to all Men; that he must not expect to raise the Plant at his Pleasure, in this Form by any regular Culture.

By Roots it will encrease very freely; and when they are parted, at the Time of taking them, with those of other *Ranunculi*, out of the Ground; the Produce must be planted in the usual Manner, and the Flowers will be prolific.

This is the certain, and the only certain Method; but he who shall cultivate these Flowers in general, according to the Rules we have laid down for producing Varieties from Seed, will not fail seeing this among his others.

If he have this in his Design, let him remember to what Kind we have refer'd it, and how declar'd it to be produc'd. Let him save Seeds from some of the semi-double yellow Kind, not from the single nor the very double Sort; for the first will probably go no farther than producing double Flowers, and the Seeds of the other have not their full Strength when they reach the natural Size.

Therefore let a semi-double Flower of the plain yellow Kind be mark'd for Seed, observing to fix on one that has a good firm Stalk, and is every Way of strong and vigorous Growth. Let these be ripen'd with Care; well harden'd; and in *August* they must be sown in a Part of the Garden open to the Morning Sun.

Let the Mould be dug out of the Place, and a Compost of three Parts light Pasture Earth, and one Part old Cow-dung, be put in its Stead. On this sow the Seeds evenly, and cover them a

Quarter

May. Quarter of an Inch of the same Compost sifted on.

In the Depth of Winter let a Mat be drawn over the Bed, supported by low Hoops; and at all Times keep the Surface free from Weeds, and carefully water'd. The Plants will flower the second Year, and there will be many very noble ones of the more usual Kinds, and probably some of this prolific Sort. They must be taken up

when the Leaves are faded, and in Autumn planted in the best Beds among the choicest Kinds, as we shall direct hereafter.

Let the Gardener never grudge this Trouble of trying for the prolific golden Crowfoot from Seed; for if he fails of it from one Sowing, he will obtain it from another; and there never will be wanting fine Flowers enough to recompense the Labour.

May.

7. BLUE ORIENTAL HYACINTH.

Pl. 33.
Fig. 7.

We have acquainted the Reader with some very elegant Species of the Hyacinth, and shall with more. It is a Genus that abounds with Variety and with Elegance; nor is there any Species without Beauty.

The wild Kind, which Children know under the Name of Blue Bells and Hare Bells, is worthy to be brought from under Hedges, to be enroll'd among the Garden Flowers. This which we here describe is ally'd to it, but of a nobler Origin, one of the Natives of the *East*, Children of the Sun, that always glow with a Richness unknown to those produc'd in colder Climates.

The Writers on Botany have been long acquainted with it. The *BAUHINES* have call'd it *Hyacinthus Orientalis*; and have given Names to many imaginary Kinds, its Seedling Varieties.

DODONÆUS has taught others to call it by the same Name *Hyacinthus Orientalis*, with the Distinction of greater and lesser. This is as arbitrary and vague as the others: these are only Varieties of Growth, but there are many really distinct Species: from those *LINNÆUS* distinguishes it by the Addition of *corollis infundibuliformibus semisextidis basi ventricosis*: Hyacinth, with Funnel-shap'd Flowers, lightly divided into six Parts at the Rim, and swoln at the Base. This Name comprehends all the Varieties of this elegant Species, and separates it as their Origin from all others.

The Root is bulbous and large, compos'd of many thick Coats, and full of a slimy Juice.

The Leaves are oblong, and of considerable Breadth; hollow'd, obtuse, of a pale green on the lower Part, but deeper toward the End; six or seven of these rise together from the Root, and throw themselves about in various Directions.

Among these rises the Stalk, round, thick, upright, juicy, and ten Inches high. It is brownish in the upper Part, but of a pale green near the Ground. There are no Leaves on it; but from

the Middle to the Top it is very gloriously decorated with Flowers. These are hollow, of a Bell or Funnel-like Shape, divided at the Edges into six Parts, and swoln into a kind of Roundness at the Base. They hang from the Stalk by short slender Footstalks of a brownish green, principally, but not entirely, on one Side; and they are of an extremely beautiful Blue, and of a very sweet Scent.

Sometimes there is a Mixture of purple with the blue; sometimes they are white, and sometimes they are fleshy; these and numerous other Varieties of them are produc'd from Seeds, of which we shall speak hereafter; but what we describe here is the original or Mother Plant.

The Flower is form'd of a single Petal, and from the Base there rise six Filaments, short, and terminated by convergent Buttons. In the Centre of these rises a single Style, terminated by an obtuse Top. This shews the Plant to be one of the *Hexandria Monogynia*.

At the Top of the Rudiment of the Seed-vessel, from which the Style rises, there are three conspicuous Pores, fill'd with a Honey-juice; these are the Nectaria of the Plant.

The Seed-vessel is of a roundish Form, mark'd with three Ridges, and contains in three Cells a few large roundish Seeds.

Culture of this HYACINTH.

This Plant is usually propagated by Off-sets from the Roots, and this is a Method of continuing it the same from Year to Year. They must be separated with Care, and planted in a light rich Mould. The Seeds are to be sown for double Kinds, and other Varieties, of which we shall speak; and we shall then deliver the Method of managing the young Plants.



Blood-red Anemone



Low Star of Bethlehem



Double Crimson Anemone



Painted Amethystine Tulip



Yellow Asphodel



Golden Proliferus Crown-foot



Blue Oriental Hyacinth

May.

May.

C H A P. II.

The Management of the Flower-Garden, for this Week.

THE Auriculas will now come into Bloom, and they will demand a great deal of Care and Attention. Let the Gardener know on what Principles to undertake this, by understanding their Nature, Value, and Cause of Decay. Thus he will pursue his Business, as one who is a Master of it from Knowledge; not from the general Precepts of perhaps an ignorant Teacher.

The Beauty of these Flowers demands and deserves his best Care. The Dust which covers them is no small Addition to it; and this must be preserv'd upon them. The Rains will wash it off, therefore the Plants must be shelter'd from them: nay the very Winds will disturb it. The Sun, whose moderate Influence is necessary to bring on the Bloom, will presently make it wither, if suffer'd to shine upon them too freely. This will exhaust the Juices too fast; and the Flowers will presently fade.

To guard against these Damages, the Plants, which have been remov'd to the Stands, and plac'd carefully upon Shelves, must be farther protected by a Canvas Curtain; this must be fix'd to the Top of the Stand, on the Edge of its Cover; and it must be so long, that being let down it will reach to the Ground at some considerable Distance from the Front: this is to be their Defence against all Injuries, but it must not be us'd except when necessary.

Though the Flowers are to be defended from Rain and Winds, they must not be choak'd for Want of Air; and though the powerful Sun at Noon is not to be admitted, yet in Times, when his Beams are less fierce, they will be very serviceable.

Let the Curtain remain drawn up to the Top, when the Air is mild and the Sun moderate; but when it shines too violently, let it be so far let down as to screen them: and when there are heavy Showers, or furious Winds, let it be drawn down entirely, and fasten'd to the Ground. When the Occasion is over, it must be drawn up again.

By this Means the Flowers will attain their Perfection, and will preserve it a long Time; a full Reward for the Trouble employ'd in raising them.

As soon as the Flowers are full blown, let the Gardener mark some for Seed: he must chuse these by the following Characters:

The Stalk must be upright, tall, and firm; the Number of Flowers considerable, that the Tuft may be large, and their separate Footstalks short; that it may be thick-set, as well as full; for when these Footstalks are too long, the Flowers stand too far from one another. The Flower itself must be large and flat, regular in its Divisions, short

N^o 33.

in the Tube, and the Colours lively, with a broad Eye of white or yellow.

These are the Plants which will produce fine Seed; and this is the Time to take the Care of ripening it. As soon as these are mark'd, let them be remov'd from the Stand.

Let a Piece of Ground be chose for them in the Seminary, open to the South-East, and defended from all other Quarters; and let the Pots be here set up to the Rim in the Ground. Take off any decay'd Leaves, stir the Mould about the Surface, and from Time to Time give the Pots a gentle Watering.

This Way the Seeds will ripen perfectly, and produce good Plants. They who leave them on the Stands have poor Seeds, for there wants free and clear Air. This is needful to Nature in all her Operations; and that of ripening Seeds is the principal.

While this Care is taken of procuring good Seeds for a succeeding Year, let good Caution be us'd about the Produce of those of a former Sowing.

We have directed the Polyanthus and other Seedlings to be shelter'd from the Sun; and none require this more than the Auriculas: two Hours full Sun will destroy perhaps every Plant of them. They must be carefully defended from this, either by their Situation, or proper Shading; and the Mould must be kept free from the least budding of a Weed, and often refresh'd with Water, a little at a Time.

Let the Slips we last Week directed to be planted out from the old Roots of Auriculas, be also every Day watch'd till they take Root; shading them occasionally, and watering.

This Week is the great Season of the whole Year for the Care of the Auriculas, and we have therefore at large deliver'd the Management of them.

Many other of the finest Flowers of the Garden will now also be disclosing their Beauties; the Hyacinths, Ranunculus's, Anemonies, and Tulips. These we have directed to be planted in particular Beds, and they must be all treated with the same kind of Care we advise to be us'd for the Auriculas on their Stands.

We have directed these Beds to be planted with Hoops for drawing on Mats, to defend the Roots and Buds from the Severity of the Winter; and the same Defence will now be needful, not only against Rain and Winds, but against too much Sun. Winds will break the Stalks, heavy Showers will beat down the Bloom, and too much Sun will quickly exhaust those delicate Juices which supply the Flower, and it will fade: therefore to preserve these Beauties long in their full Perfection, they must

May. must not be too much expos'd to the free Air. The Mats must be always ready for drawing over them; and they must be cover'd in all hard Showers and Storms.

In the best Days they must not be expos'd to the Heat of the Noon Sun; the Mats must be drawn over them at Eleven o'Clock, and not

May. taken off till between Four and Five: thus they will have the Morning and Evening Sun, and sufficient free Air, without which they would fade, as soon as from too much Sun.

This is the true Method of managing all tender Flowers, and in this Manner they will retain their Beauty a long Time.



SECTION II.

The Management of the SEMINARY, for this Week.

THIS Week the Gardener should plant out into the open Ground such Seedlings of Exotic Trees and Shrubs as are intended to stand the Weather, but, requiring some Care and Protection while young, are first rais'd in Pots. The Carolina, Bay, and Euonymus, the Tulip Trees and Candle-Berry, with others of the same Character, are now to be thus treated.

A shelter'd Part of the Nursery is to be chosen; they are to be planted in a light but not poor Earth, and they must be unpotted with Care. The Evening of a cloudy Day must be chosen for this Business, and the first Caution must be to open as many Holes as there are Plants. The Bottoms of all these must be water'd, and the Mould laid out at their Sides, and well broke.

Then the Plants must be taken out of the Pots with their whole Ball of Earth; and the Fibres which spread on the Outside of that must be taken off with Scissars. The Ball thus trim'd, must be set upright in the Hole, and a little of the Mould drawn round about it: then the Sides of the Ball must be gently cut down lengthwise, in several Places, so as to open the Earth a little without

breaking it to Pieces, and immediately the rest of the Mould thrown in.

Thus will the Roots be in a Condition to shoot new Fibres, and there will be a free and well broken Earth to receive them; and all the Time so much of the old Earth will remain about them, that there will be a continual Supply of Nourishment, without any Check from the Removal.

They must be water'd very carefully as soon as they are put into the Ground, and this repeated at Times till they are well establish'd; after which they will take their Growth with the rest of the Plantation, sharing only the common Care; till they are of a Bigness to remove into their intended Places.

Let a Piece of Ground be dug up in a warm and shelter'd Part of the Nursery, for sowing the Seeds of some of the hardier Trees of *American* Origin, particularly the Coniferous Kinds. They must be cover'd half an Inch, and at Times water'd. In Winter they will require to be shelter'd, by drawing a Mat over them in the severest Weather; but at all other Times they will succeed the better for having the more Air.



SECT. III.

POMONA, or the FRUIT-GARDEN.

CHAP. I.

Products now in Season.

THE Remains of the Winter Fruits are but few, and the principal Additions to them from Art (for there are none now from Nature) we nam'd in the preceding Week's Catalogue. The present may produce, from the forcing Frame, some Plums: they cannot be of the finer Kinds, nor in their greatest Perfection; but still the Sight of a Plum, that is but eatable, is a good Addition to the rest.

We have observ'd, there may be Apricots and

Cherries from the same Source, and Strawberries, which we have taught our Pupil to raise in Hot-Beds.

There will yet remain also, with good Management, the Nonpareil, and two or three Kinds of Russet Apples; and the Winter-green and some other Pears. A good Manager will, from these Materials properly dispos'd, make some Appearance till Summer brings in more.

May.

May.

C H A P. II.

The Care and Management of the Ground.

THE Supply from the forcing Frames will often carry the Gardener thither, and he must allow them an Attention suited to their Produce. Nature is greatly exhausted by the Force used to ripen Fruits at so early a Season, and Nourishment must be given in Proportion. The Earth must be frequently stirred about their Roots, and they must have every Day a moderate Watering.

The Trees must be more and more open'd to the Air, which will be now too mild to hurt them; and every other Day it will be very serviceable to water them all over, Branches, Leaves and Fruit.

The Fig Trees which have been cover'd up during Winter, and by Degrees expos'd to the Air in Spring, should now be left perfectly open.

Clear away Weeds from the Earth about Fruit Trees, and if any seem going into a decaying Condition, the Leaves turning yellow or curling up, let them be water'd all over; and observe to do this in the Beginning of the Afternoon, that neither the Sun's Heat, nor the Night's Cold, may make the Watering prejudicial.

This done, let the Gardener with his Nails and Lift go over his Fruit Trees against Walls: if any Branch be loose, let him now fasten it carefully: let him rub off all fore-right and irregular Shoots, and train to proper Places all that are fit for Service. This done along the Walls, let him go over the Espaliers in the same Manner, and for the last Time this Season, reduce every Thing to order.

Let him look to all new planted Trees, and see if they be firm in their Place, and promote their Growth by Watering.

A great deal of Care will be requir'd of the Fruit Trees now in Bloom, and set for Fruit.

We have directed the Winter's Care of them; and have advis'd Pieces of Furze to be stuck among the Branches to keep off dangerous Blasts: if these be not found sufficient, but the Blossoms, or the new set Fruit appear in Danger, let them be more thoroughly shaded by Branches of Laurel, the large Leaves of that Tree keeping off the Winds better than any Thing.

A great deal of Care must be taken to fasten these properly; for otherwise the Force of the Winds will drive them against the bearing Branches, and they will beat off the young Fruit

which they should preserve.

These Practices not only secure the Fruit from the Blasts, but forward it very considerably in the Growth; but unless some Care be used afterwards, the Benefit like many others when ill manag'd, will prove the Destruction of what was at first preserved by it.

'Tis very late before the Chillyness of Morning and Evening go altogether off; and the Shelter these Branches of Laurel have given to the young Fruit and the Blossoms, can but very ill be spared while there remain any of these Colds in the Air. They must therefore be very carefully taken away, and the Branches which had been most shelter'd, must be most gradually exposed.

After a little Time their Leaves will grow to a Bigness to serve as a Defence, and this should be watch'd and expected before the others are removed. No Branch that has been once shaded should ever be uncover'd till the Blossoms have stood their full Time, and are faded, and the Fruit is firmly set.

The most dangerous Time for the Blossoms of Wall Fruit is, that of black Frosts: the Blossoms fall, and the new set Fruits in Numbers during the Continuance of that Weather, and the Cause is little known. It is not that those Frosts are severer than any others; but no Dew falls in such Nights which gives them Power.

The weakest Tree always suffers most by Frost, and for the same Reason Trees in general will suffer more by these Frosts than any others, because the want of that natural Refreshment they should have from the Dews of the Night will make them weak.

This must be avoided by giving all the Fruit Trees in such Seasons daily Waterings: it must be done about Three in the Afternoon, and the whole Mould of the Border should have the Advantage of it. The Roots will thus be well supply'd, that the Strength of the Growth will prevent the Effects of the Frost.

Those who have not seen the Experiment, cannot well believe the Advantage of it: but if any one will try it fairly, by watering the Borders at some of the Trees, and not at others, he will see such a Difference as will very perfectly convince him.

S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

C H A P. I.

Products now in Season.

BESIDE the Products of the common Ground, which to the Things named last Week as in Season, adds Sprouts and Savoy, Coleworts

and Spinach; there may be this Week gather'd from well manag'd Hot-Beds, Pease and French Beans, both in very great Perfection.

The

May. The young Shoots of Salsafie will now be fit to cut, and they are by many esteem'd very delicate eaten in the Manner of Asparagus: Hop-tops make another Dish of the same Kind, and they are so wholesome as well as pleasant, that

it is very well worth while to plant some Roots of the Hop about Hedges, or in other Places where as they grow up they will have Means of climbing. May.

C H A P. II.

Care and Management of the Ground.

Spring will by this Time shew itself in the Kitchen Ground in all its Vigour. The Crops we have directed to be put into the Ground will shoot up strong and free; and Weeds, the Sowings of Nature, will appear with the same Advantages among them.

Let the Gardener begin the Week with a general weeding of the Ground: among the smallest and tenderest Kinds this must be done by Hand; those of more Growth and Distance the Hoe is to be us'd, and for this Purpose the Kind of Hoe should be one that will cut deep.

In those Plantations which are in Rows, and at due Distance, let him use the Spade; a digging between them will more effectually destroy the Weeds than any other Method, and it will greatly strengthen the Growth of the Plants.

It would be well if this general weeding could be follow'd by a general Watering; but as that is not easy in large Pieces of Ground, it will be proper to observe what Crops want it most, and to give it them regularly, leaving the others to the Course of Nature; whose wise Author knowing the general Want of Showers at this Season, sends them frequently.

The best Times for hoeing are in the driest Days: Weeds that are to be taken out by Hand come up most freely after a little Rain; this will direct the Gardener how he shall appropriate his Work to the Seasons.

The digging may be perform'd indifferently in either Weather; but in the driest Days the Mould will break easiest, and the Spade will be most serviceable: for we have shewn that this breaking the Ground disposes it so excellently for receiving the Dews, that it in some Degree answers the Purpose of watering.

In the Weeding by Hand, and in the Hoeing, wherever the Plants are too thick, the weakest must be cut up or pulled out. There will be the greatest Advantage in all Crops, from observing a due Distance among the Plants.

Slip some Artichokes, and chuse a moist Part of the Ground for planting them: they will require frequent Waterings for some time, but in the End the Practice will be found very advantageous.

Chuse out a shaded Part of the Ground open to the North West, for sowing young Salletting; break the Mould very well, and sow the common Kinds in the usual Manner. The Situation will prevent the young Plants from growing too

quickly out of Use, as they will soon do at this Time if allow'd a more favourable Aspect.

Slip some Sage and other Aromatick Kinds, and plant them out in a shady Border: give them frequent Waterings, and shade them from the Sun, they will thus soon grow to be strong and proper Plants.

Dig up very perfectly a Piece of good Ground for Cos and Silesia Lettuces. Sow some good Seed, scatter a few Bushes over the Bed; and if there do not come Showers within three or four Days, give a gentle Watering.

Take the Advantage of a fair Evening after a Shower, to draw up some Mould about the Stems of the Cabbages and Colliflower Plants we directed to be planted out some Weeks ago: it will strengthen their Growth, and prevent their being too long in the Shank, which will be of great Service at this Period; and at the same Time it defends them from the Sun and drying Winds.

The Plants in our Celeri Bed will be strong, if they have been weeded and water'd according to the Directions. A new Bed must be prepared for the greatest Part of them, and in a cloudy Evening they must be taken up, leaving as many as will stand at about a Finger's Length Distance, and planting the others in their new Bed at the same Measure. A gentle Watering will be necessary for the new planted ones, and it will be serviceable for the others.

This Care taken of the several Crops, let the Gardener look after Insects, which the Warmth of the Season now brings out from their lurking Holes; and which if not destroy'd before they copulate, will soon lay the Foundation for an unconquerable Multitude.

At early Morning, and half an Hour before Sun-set, they will always be found abroad in great Numbers; and every warm Shower will also bring them out.

These therefore are the Times to seek after them, and the best Instrument for their Destruction is a little Paddle, with a Handle five Foot long, and the Blade sharp. A Blow with this cuts the naked Snail asunder; and he is the worst Enemy the Gardener has. If destroy'd upon the Bed, they should be suffer'd to remain and consume there; for their Flesh soon dissolves into a kind of slimy Moisture, which is wash'd into the Ground by the next Rains, and is a very rich Manure.

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R XXXIV.

For the second Week in *MAY*.

S E C T I O N I.

FLORA, or the PLEASURE-GARDEN.

C H A P. I.

Flowers and curious Plants now in their Perfection.

May.

WE lay before the Reader, in the annexed Plate, six elegant Tulips, design'd originally by the great Hand of VAN HUYSOM; purchas'd from among the Collection of the late Mr. SADLER, and compar'd with Nature. We will not say corrected by her Works; for it is Justice to the Memory of that accurate Painter, to declare we found them the same in Nature and on his Paper.

As these had never been publish'd, we judg'd it would be agreeable to our Readers to give them in one Plate, and shall take this Opportunity of delivering at large the Culture and Management of that most valu'd Flower in all its Varieties.

What we have had Occasion to say already of the Nature, Species, Varieties and Characters of the Tulip Kind, will save the entering on a particular Detail of the Parts in this Place, and allow the due Compass (after enumerating the Variations and Tincts of these six) to give the Culture in its full Scope, not from the repeated Pillagings of Authors, but Experience.

Our Reader will remember that the Source of Tulips, in general, is from two Species; the

one with narrow Leaves and a drooping Flower, the other with the Flower erect, and the Leaves broader.

Those which we now lay before him are all Varieties of the latter Kind; the *Tulipa flore erecto foliis ovato-lanceolatis* of LINNÆUS: Tulip, with an upright Flower, and lanceolate but somewhat oval Leaves.

The Characters of the Genus are necessarily the same in all; a Flower of six Petals without a Cup, six very short Filaments with long and large Buttons, and a great three-parted Head plac'd without a Style upon the Germ, or Rudiment of the Seed-vessel.

These Characters refer all Tulips (for they are common to them all) to the sixth Class in the LINNÆAN System, the *Hexandria*; and to the *Monogynia*, its first Section.

The Roots and Leaves are much alike also; but as these are very obvious and well mark'd Varieties, there remain also some fix'd tho' slight Particularities in those Parts, as well as the Flowers.

May.

May.

May.

1. CHANGEABLE TULIP.

Pl. 34. The Root is roundish, brown, and hung with
Fig. 1. thick Fibres; firm in Substance, and Snow-white within.

The Leaves are broad, green with a Tinge of greyish, wav'd at the Edges; and sharp-pointed.

The Stalk is fifteen Inches high, tolerably upright, firm, and greyish.

The Flower is of the largest Kind, and painted with a very bold and beautiful Variety.

The Colours are three: a fleshy Crimson, a pearly White, and a very bright Yellow. These are laid on in an inexhaustible Series of various Forms, and thence from one Variety make a thousand.

In general, the White is the Body or Ground Colour, but the Red covers the greater Part of the Flower; and the Yellow is not blended with these, or laid on like them in every Petal, but here and there touch'd as it were lightly and with a fantastic Hand over the rest, in Clouds upon the Edges.

The Perfection of this Flower depends upon the Proportion of Red; if there be not a great deal of this the whole is faint; yet there must always be left Space for the White and Yellow, in both which also the Red may shew itself in elegant Streaks.

2. The GOLDEN TULIP.

Pl. 34. This wants many of the Advantages of the
Fig. 2. others; Bigness of Flower, Strength of Stalk, and Variety of Colour, yet is there not one among them which excels it when in full Perfection. This will depend upon the Gardener's Care; which we shall direct.

The Root is oblong, covered with a black Skin, and hung with a few slight Fibres.

The Leaves are broad, very long, hollow, of

a blueish green, and pointed.

The Stalk is a Foot high, round, pale, slender, and not very firm. It seldom stands perfectly upright, unless supported.

The Flower is moderately large, and of a perfect gold Colour, unting'd with any other. Its Duration is a valuable Consideration, for it will outlast almost any other Kind.

3. The BLEEDING TULIP.

Pl. 34. There is not among all the Variety of Tulips
Fig. 3. a bolder colour'd or a more conspicuous Flower than this.

The Root is large, round, firm, and cover'd with a dusky Skin; the Fibres are numerous and long.

The Leaves are broad, wav'd at the Edge, of a pale greyish green, and hollow'd.

The Stalk is round, firm, upright, and eighteen Inches high; thickest at the Base, smaller to the Top, and of a pale green.

The Flower is one of the largest of the Tulip Kind, and very glowing in its Colours. These are only two, yellow and red: but they are very

perfect in their Kinds, and well dispos'd in the Flower. The yellow is paler than what we usually express by gold Colour, but perfectly clear and bright. The Red is a deep Crimson, and is very exactly what the best Judges mean by Blood Colour.

The Yellow is the Ground Tinct; the Red is laid on in very delicate Veins, and seems as if it were a fluid Colour running down the Flower. Thence it obtain'd the Name of bleeding Tulip. The Streaks are dash'd and broken in some Places, but many of them are more distinct, and rise from the very Bottom of the Flower, breaking and sending out Side Dashes as they rise.

4. The PEARL and CRIMSON TULIP.

Pl. 34. As the preceding Flower strikes the distant Eye
Fig. 4. by the Force and Boldness of its Colouring, this is more calculated for a near View. In the other all is strong and great; in this delicate and tender. The Incurious pass it over in the Ground, but the Eye of a Dutch Florist will rest whole Hours upon it, tracing the Shades and Tincts, their Regularity and Lustre.

It is an upright and stately Tulip, tho' not of the largest Kind.

The Root is oblong and large, covered with a blackish Skin, and hung with a few slight Fibres.

The Leaves are very large, broad, hollow, wav'd, pointed, and of a blue green, often brown in the hollow Part.

The Stalk is firm, but not very thick; it is of a pale green, upright, and fourteen Inches high.

The Flower is regular in Shape, and in the Manner of Opening: so much indeed, that it

may stand as an Example to the Gardener what Flower of the Tulip Kind is perfect.

The six Petals are in two Series, three within, three outward, and the three inner ones are longest, but not much so. The Bottom of the Flower is finely rounded, swelling in a due Proportion to the Height, and giving a free Disposition to the Petals, without throwing them asunder.

Thus the whole Flower, when in full Glory, is of a regular hollow Shape; and the Tops of all the Petals are rounded off, not sharp pointed.

This is the Form when full in Bloom; the Petals stand nearly strait upright, only having so much Variation from that Form as takes off the Air of Stiffness.

The Colours are only two; in plain Words they are white and red; but he who studies Nature in these elegant Forms, will find there are a thousand Whites, and as many Reds, though we

want

Tulips.



The Changeable Tulip

The Bleeding Tulip

The Golden Tulip

The Pearl & Crimson Tulip

The Auriflame, or Gold and Scarlet Tulip

The White & Purple Tulip

J. G. Smith sculp.

May. want Language to express them. The White is the Ground Colour in this Flower, and it is of that delicate Kind we call pearly: there is in it a Tincture of greyish and blueish.

The Red is the most perfect Crimson; and it is

dispos'd in the Flower with a most pleasing Regularity. The Edges of the several Petals principally have it, and it is laid on there in even Stains, which dye away as they are continued narrower toward the Middle.

May.

5. The AURIFLAME, or GOLD and SCARLET TULIP.

Pl. 34. What we have just said of the Variety of Colouring under the same general Name, is in no Flower seen more strongly than this Tulip. The Colours, in plain Words, are red and yellow; but so they are in our third Species, and several others; yet this Flower shews them distinct from all: the Yellow is perfect Gold, and the Red the highest Scarlet.

It is a Tulip of the largest Kind, but often less erect than many others.

The Root is very large, oblong, covered with a brown Skin, and white within. The Fibres are long, thick, and numerous.

The Leaves are very large, broad, wav'd, of a fresh green, and pointed.

The Stalk is fifteen Inches high, round, not very thick, and generally bent by the Weight of the Flower.

The Size and Colouring of the Flower render

it extremely conspicuous. The Colours, Scarlet and Gold, are dispos'd in long, broad, and irregular Stains, with a wild Freedom; and the Petals throw themselves open as if to disclose them; Nature intending in this Flower the glowing Tincts to be the Source of Beauty, and not the regular Form.

The Yellow is the Ground Colour, and shews itself very conspicuously in every Part of the Petals, but most near the Base.

The Red is dispos'd in long Streams, broadest at the Extremity, and narrower as they approach the Bottom.

This was the Colouring of the sacred Ensign carry'd before the antient Kings of *France*, and thence the Name of this Flower, which we have taken from them. That Ensign was call'd *Oriflamme*, and *Auriflamme*, and this Flower by the same Names after it.

6. The WHITE and PURPLE TULIP.

Pl. 34. We have in this another Instance of that vast Variety there is in Nature, under the few common Names of Colours. This Flower differs in Tinct from any of those we have describ'd here, or before, and yet the same Names must express the Colours: White is White in a thousand Varieties, and so it is with Purple.

The Root is large, and covered with a thick deep brown Skin.

The Stalk is upright, and a Foot and half in Height; thickest at the Base, small toward the Top, but firm throughout.

The Leaves are very broad, and of a deep green; pointed at the Ends, but less wav'd than many others.

The Flower is of a middling Size, of a perfect Form, and of extreme Beauty.

It is handsomely rounded at the Base: the Pe-

tals stand upright, neither bending in at the Tops, nor turning outward, more than to preserve that beautiful Freedom there is in all the Works of Nature; and they are tolerably rounded at the Ends.

The Colours are only two, but they are perfect in their Kinds, and dispos'd with a fine Regularity. White is the Ground Colour, and this is the most perfect in its Kind that can be conceiv'd. We usually see White either tending to Blue or Yellow: this has no Tinct of either; but is true, genuine, and unstain'd Ermine.

The Purple which forms the Variegations, is laid on in fine, slender, and even Streaks; they run to the Base of the Petals, and they spread themselves in smaller Portions over the whole Flower.

The CULTURE of TULIPS.

As these we have nam'd here, those in our preceding Numbers, and a Multitude of other Tulips, are no more than Varieties rais'd from the Seed of some good Kinds, we shall here enter upon their Culture together: the same Management serves for them all, the same Soil suits them, and they will be brought severally to their Perfection by the same Care.

The usual Method of Encrease is by parting the Roots; and the first procuring of these is by Purchase. The common Gardener thinks he knows enough if he can chuse sound Roots, keep them alive, and encrease the Number by their Off-sets: we set out on a very different Plan. We shall teach him to raise these from Seed, in a much higher Perfection than he can purchase or preserve them; and, for moderate Labour, offer

him the Reward of Multitudes of Flowers, and among them many new ones.

The only Way to Perfection, in these Cases, is the Beginning from the Seed. The first Care is the Choice of what is good; and this is the Time for chusing the Flowers from which it shall be taken.

Of saving the Seed.

Let the Gardener now look with a careful Eye over his Beds of Tulips, and mark a certain Number of them for Seed. Let him chuse for this Purpose such as have first the general good Properties, Strength of Stalk and Regularity of Flower: Let him see that the Petals be rounded, the Bottom well shap'd and swelling, and the Buttons brown.

No

May.

No Tulip can be fit for Seed that has not all these Qualities : and next to these is the Consideration of Colour.

In many other Plants we have directed the Gardener to save from Year to Year the Seeds of the gaudiest and finest Flowers ; but it is not to be so here. All that is requir'd of the Mother Plant is to have the Properties before recited, with a plain Colour.

Experience shews, that when the Seeds of a variegated or strip'd Tulip are sown, the Seedling Flower has all the Colours of the Parent, but they are confus'd and irregular : too much Mixture takes away the Beauty.

The Effect of Culture is to throw in these Stripes and Variegations : it will never fail of this Effect if well conducted ; therefore the Choice of Flowers for Seed should fall upon those which have only one Colour, and that such as is easiest to be alter'd.

When the Gardener has mark'd the Properties in several Flowers, let him examine their Colours. Two Articles require Consideration under this Head, the general Tinct, and the Bottom : this is usually very different from the rest, and it must be chose for easy Variation.

Any plain or single-colour'd Tulip, that has the general good Properties, will do for Seed ; but I have found the best of all to be the plain dull red Tulip, with a white Bottom. This dull Red breaks freely in the Seedlings, and the Colours have all their Lustre.

Next to the white-bottom'd Tulip, the yellowish should be chosen. Those Flowers that have dark Bottoms I have always found break difficultly and irregularly. Nothing is so hard as to change a deep Tinct in the Bottom of a Tulip ; and the rest of the Colours always depend in a very great Degree on this. The Seed of a yellow Tulip should never be sav'd, unless for the single golden Kind we have describ'd in a preceding Chapter.

The Gardener having thus mark'd a sufficient Number of Flowers for Seed, must employ his due Care that it ripen well. At present all he will need to do is to preserve the Flowers from too much Sun, which would dry up the Dust upon the Buttons, on whose good Condition the Perfection of the Seeds depends.

When the Flowers begin to fade, let him cut down the Stems of all that stand near those which are mark'd for Seed. After this, the Roots of the others will draw less Nourishment, so that those which have their Seeds to ripen will be well supply'd.

To promote this, let the Mould be broke every other Day, half an Inch deep all about them, with a Trowel ; and immediately after let them have a slight Watering.

In this Manner let them be manag'd till the Seed-vessel has its full Bigness : then let no more Water be given ; but let the Air come freely. The Seeds have by this Time their full Bigness, they have receiv'd their Impregnation, and they are only to be harden'd.

The Stalk will soon shew that no more Nourishment

is given them from the Root ; they may therefore after this be cut off, and the hardening of the Seeds finish'd in an airy Room, where they will be out of the Way of Dews and Damps.

For this Purpose, let a small Shelf be hung from the Cieling, covered with Cartridge Paper, and secur'd by an Edge of the same Paper, half an Inch high. On this let the Heads be laid, and every three Days mov'd about, to turn them, that they may dry freely.

Thus let them lie till the third Week in *August* : then let them be open'd, and the Seeds carefully shook out. Let them be scatter'd over the Shelf, and again turn'd every three or four Days, till they are sown.

Of making the Compost.

The Seeds thus provided, the second Article is a proper Soil to receive them. *Europe* affords none such naturally, nor have our Gardeners hit upon the proper Mixture : or if any of them have, they keep the Secret.

MILLER, heretofore the Florists Oracle, directs them to be sown in a fresh sandy Earth : this is too poor.

The *Dutch* use Kitchen-Garden Mould, well enrich'd by Dung ; but this is as much too rich as the other is too meagre. The one does not supply Nourishment, the other makes them rank.

What I have found succeed, is this :

Mix together two Bushels of dry Mould from under the Turf in an upland Pasture, five Pecks of Pond-Mud, and three Pecks of Earth from under an old Wood-Pile.

As soon as the Flowers are mark'd for Seed, let this Compost be mix'd and thrown up in a Heap to the Weather : it will be fit for Use by that Time the Seeds are ready to be sown.

This I have found to yield a sufficient Supply of Nourishment, without making the Roots rank, and it keeps free from Worms.

Of the Time and Manner of Sowing.

In the Middle of *September* let the Gardener fix upon a Piece of Ground that is open to the South East, but defended from the full Noon Day Sun. Let it be naturally open also to the North ; but let a Reed-Hedge be plac'd on that Quarter, upon a Hinge, that it can be brought forward to shelter the Spot in severe Weather. At other Times, the Openness to this Quarter of the Heavens, is an Advantage.

Gardeners direct the sowing in Boxes and Pans ; but it is wrong ; the Compost is too small ; and the Earth in these Conveniences never has its natural Warmth or Moisture.

Let the Mould be dug out of the Border in this Place, and the Compost thrown in, saving as much as will be needful to cover the Seed. Lay the Surface even, and take a proper Opportunity of sowing the Seeds.

The *French* first discover'd two Particularities in the Tulip : That the Seed succeeds best, if sown when the Wind is in the North, and when the

May.

May. the Moon is in her Decrease. The *Dutch* try'd this repeatedly, and declare with one Voice they have found it true: what Experience I have had also confirms it. Therefore whatever says Philosophy or Fancy; let the Gardener follow this Practice: the Advantage is certain, and perhaps some Time the Cause may be understood.

Therefore let the Gardener chuse such a Day and an Hour before Sun-set: and let him scatter on the Bed the Seeds moderately thick.

Sift over them a Finger's Breadth of the same Compost, and give a very slight Watering.

Lay on the Ground a few light Hawthorn Bushes, and leave the rest to Nature. During Winter, the few Weeds that rise on the Bed must be now and then carefully pull'd up, while they are young; for, when they have more confirm'd Roots, the taking them up will destroy the Seeds.

Let the Reed-Hedge be brought forward for Shelter all the hard Weather, but in Spring let it be thrown open.

Of the Management of the Plants.

In Spring let the Bushes be taken off, and the Ground once a Week carefully weeded and looked over. The young Plants will soon appear in great Numbers: their first Leaves are like Grass, but they will be known by bringing up the Husk of the Seed with them.

This must be a Time of Caution: an ignorant Hand might take up the Seedlings; and they will require not only to be weeded very frequently, but to be water'd once in four Days, a little at a Time, and from a fine-nos'd Pot.

Soon after this the Bulb will form itself, three Inches deep in the Ground, and out of Reach of Injuries.

The first Appearance of the Plants will be at the latter End of *March*; and in about ten Weeks, that is, toward the Middle of *June*, these green Leaves will decay.

Then let the Surface of the Bed be raked, and half an Inch of fresh Compost be sifted over them.

Thus they may remain till the same Time the succeeding Year; but then it will be of great Advantage to remove them.

For this Purpose, let a fresh Parcel of Compost, like the first, be mix'd up in Autumn, and let it lie all Winter.

In the latter End of *June*, the second Year, let the Border be stir'd, and the Mould with the Roots taken out.

Then let the fresh Compost be put in, and the Mould sifted, to separate the Roots.

This done, let the fresh Border have a very gentle Moistening, and then let the Roots be planted on it with Care, at about three Fingers Breadth Distance. Let them be covered with two Inches Depth of the same Compost, and thus left for the succeeding Winter.

The next Year, at the same Season, let the same Operation be repeated.

Thus they are to be manag'd the four first Years. On this, which is a Method very little

N^o 34.

known, the Success of the Seedlings will greatly depend. In all these Transplantings the Compost should be laid about five Inches thick, and the Bottom should be trod hard before it is put in.

After the fourth Year, the Quantity of Compost must be four times as much as at first; the Border much larger and deeper; and the Roots must be planted at a full Finger's Length Distance.

The fifth Year they must have more Room; more Depth of Soil, and fresh Compost; and this Season some of them will probably flower; the sixth Year, the generality; and the seventh or eighth, all.

After this, they are to be treated as the other old Roots.

The Soil that is commonly directed to be us'd for these, is Pasture-Earth, with the Turf rotted in it, and some Sand and Lime Rubbish. This I have try'd, and found succeed in the usual Manner, but greatly inferior to the Compost we have here directed; which should always be made of the same Ingredients, tho' fresh every Year.

All the Difference of their Management is, that they must be planted a few Weeks sooner than the old Roots, and something deeper in the Ground.

Of breaking the Tulips.

A great many Falsities have been publish'd with Regard to the Method of breaking Tulips; that is, of bringing them to their Stripes and Variations. Something may be done in it, but less than is usually pretended: Nature is the great Artificer; and they write falsely who pretend to do it all by their own Management. The giving them fresh Soil is a principal Article, for without this Nature cannot perform her Work.

On one Foundation all rests; and that was discovered long since by *Clausius*: If the best Tulip be suffered to stand a great many Years in the same Spot, without taking up, or other Management, it will lose all its Stripes, and return to the original plain Colour: and, on the contrary; frequent Removal brings the Stripes and Paintings.

We have now led our Student to the Flowering of his Seedling Tulips; and he is out of the Number to make his Choice of such as are to be the Subjects of his future Care. This will depend upon two Circumstances; the Colour of the Bottom, and that of the Buttons.

We have observ'd, that the true Colour of the Bottom is white or yellow. Altho' the Seeds have been sav'd from only such as had these Characters, there will be among the Seedlings some with those deep-colour'd Bases which never change. These must be all taken up and destroy'd, for they will never come to any thing.

Next the Buttons are to be examined. It is essential to a good Tulip that these be brown: they are often yellow: they will be so in many of these Seedlings; and as this Colour never will change, those which have it should also be taken up.

Lastly, if there be any of the green or olive
5 K Tulips

May. Tulips among the Seedlings, they must also be taken away.

These remov'd, the Florist will see what he has by way of Store for his future Labours; and as the good Properties we have nam'd never change any more than the bad ones, he will find that he has here a certain Number of Roots, which will not fail his Expectation, if he do not fail in the needful Labour.

We have said that the Seedlings, when brought to this State of free Flowering, are to be treated as other old Roots. We suppose then, that after flowering, and the Leaves fading, they have been taken up, and that the Season approaches for planting them.

Let a Border be chosen in such an Exposure and Situation as we directed for sowing the Seeds, only let it be larger. The Mould must be dug out, and the Compost thrown in, to the Depth of twelve Inches. Let this be done in the latter End of *September*, and an Opportunity then taken of a decreasing Moon, and a Northerly Wind. Let the Roots be set upright, at a Span Distance from one another, and then more of the Compost must be sifted on, to raise the Bed six Inches higher; then let the Top be finish'd a little rounding, to throw off Wet, and leave them to Nature, only defending them against the severe Cold of Spring, by Canvas drawn over Hoops.

From Time to Time, in Spring, the Bed must be weeded; and, occasionally, moderate Waterings are to be allow'd. Thus the Tulips will be brought to Flower.

This is the Method of bringing the Flower to break; but it does not take Effect on all at the same Time: some will come to this Beauty sooner, and some later.

When they are in Flower, let them be carefully looked over, and let such as are well broke, be mark'd for planting out among the more excellent Kinds, for the succeeding Year.

Those which have come truly to their Beauty, have the Stripes clear to the Bottom, and keep their Colour to the last. Such as these are perfectly broke, they will never return to the plain Colour while well manag'd; and their Off-sets will always afford the same Kind of Flowers. These are therefore a certain Treasure.

In this Manner, every Season, some will break, and the Stock of perfect Tulips will, from Time to Time, be encreas'd.

When all are got from the Seedlings that will break, or are worth preserving, let the rest be planted out in common Parts of the Garden.

Every Year we would advise the Florist to sow some Seed. There is no great Trouble; and in that Manner of Management, the Length of Time before the Plants flower would not be regarded; for, after the first Parcel, every Year will bring a Succession, and there will be an everlasting Fund of Variety, Beauty, and Pleasure.

Of the Management of the perfect Plants.

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These outside Skins on the lower Part of the Bulb, are often so hard, that the Fibres cannot get thro' them, and many a good Root is lost; for if the Fibres cannot make their Way, it will rot, instead of growing.

This done, set each Root in its Place upon the Mould, and draw round it a small Circle of the Sand up to its Top. This is a very essential Article. It keeps off Worms, and it prevents the bad Effects of too much Moisture.

After this, they must be covered up, and defended from violent Frosts and heavy Rains, by Canvas or Mats, on Hoops; and when they rise toward Flowering, they must be water'd at Times; and Care must be taken in the earlier Waterings, that none settle among the Leaves, for it will often rot the Plant.

If at this Time a Leaf of any of the Tulips droops, curls up, and appears distemper'd, let it be cut off; for otherwise the Mischief will infect the whole Plant, and often it will spread over a great Part of the Bed.

Of preserving the Tulip in Bloom.

The Florist, when he sees his Tulips burst open in all their Beauty, finds his Toil well rewarded; but he often sighs to think of the short Duration.

Nature has not intended Flowers for long Continuance. They serve to enclose and defend the Parts of Fructification; and when that Purpose is effected, naturally fade.

The Tulip remains in its fine Condition longer than most other Flowers, because there being no Cup, a greater Duration of this sole Defence is necessary: but this Period, which is long in Comparison of most other Flowers, is too short for the Florist, whose Labours thro' six or seven successive Years to bring it to Perfection, and whose continued Pains to preserve it in that State merit a longer Permanence in its Beauty. This is in some Degree in his own Power.

Let him consider what makes the Flower fade most, and guard against it. The Heat of the Sun is the great Article of Damage: it brings on the Decay in a double Manner; for its Influence ripens the Seed-vessel, and renders the Flower no longer necessary, and at the same Time exhausts the Juices of the Petals.

Some Sun is needful, but a little serves: all that is above the due Proportion hastens the Decay.

The second Article of Danger is from Rain. The Root of the Tulip will require some Moisture

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The Advantage of an occasional Covering is very obvious; but the Manner of doing it in many Places is wrong.

Our Gardeners are not so careful or intelligent in this respect as their Neighbours. Many leave the Beds of their best Flowers open; and Winds, Rain and Sun are admitted to the Flowers as Nature pleases: so that an Hour sometimes destroys the Pleasure toiled for throughout the Year.

Others who cover them use only common Hoops and Mats; and they are thus choaked for want of Air.

The best Method is to plant upright Posts of about four Foot high, on each Side of the Bed, at moderate Distance, and over these to carry Hoops: this kind of Frame may be occasionally cover'd with Canvas; and it will still retain Air enough for the perfecting and preserving the Beauty of the Plants.

The Canvas must be drawn over the Hoops from Eleven to Four in the Afternoon every Day, when the Sun is powerful. It must be also drawn on when there are sharp Winds, hasty Showers, or severe Nights. Thus the Flowers will have the Morning Sun, and Evening Breezes to refresh them, and will be open at the usual and agreeable Hours of viewing them; and by this Preservation they will continue twenty, thirty, or even forty Days in bloom, and die off at last with all their Colours perfect.

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May. This being an accidental Growth lasts but a little Time. The Leaves soon after fade, and the Root gets into a State of Rest.

It is then to be taken out of the Ground. The Middle of June is about the Time for this; and it must be done in a careful Manner, that the Roots be not cut or bruised.

At this Time let a dry Mat be spread over a Table in an airy Room; and as the Roots are taken up, let them be clean'd; and the loose, ragged, outer Skins pulled off; let them be then laid upon the Mat not to touch one another; and every Day turn'd or moved about. They will thus harden a little; and they must then be put up in Drawers till the Time of planting.

They must not be kept moist, for that would give them a Tendency to Mouldiness, and they would then rot when put into the Ground; neither must they be kept too close, for in that Case the Air being shut out from Access and Refreshment, the Principle of Growth will be destroy'd in them.

The only farther Caution must be to preserve them from Vermin; for they are not unpleasant, and will be a sure Prey if left exposed.

The Off-sets separated from the principal Roots must be managed exactly in the same Manner, and planted in Autumn, three Weeks sooner than the large Roots, in separate Beds. Thus they will flower as they gather Strength, and then according to their Value may be received among the others.

Thus may the Florist manage his Tulips from the Seed to the Perfection of the Flower; and if he every Year continue the easy Task of sowing, he will in Return after the first Period, have every Year new Flowers for his Credit and Satisfaction; and Numbers to enrich the Gardens of his Friends; or if he please, for Profit.

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If the Weather come in severe just as their Buds rise, they must be cover'd: the Surface of the Mould should be stir'd to promote the settling and sinking of the Dews, and to destroy the first Shoot of Weeds; and afterwards, if the Season be dry, they must be allow'd with due Care a little Water.

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C H A P. II.

The Care and Management of the Flower Garden for this Week.

THE Garden by this Time glows with a Variety of elegant Flowers in their separate Beds: the Anemonies are in great Perfection, and the Ranunculus's daily discover new Beauties.

These let the Gardener manage as we have just directed him to treat the Tulips when in Bloom; and he will have the same Advantages. The Wind, Rain and Sun being kept off by moderate Covering, the Flowers will not only be much finer, but they will last double the usual Time they do when exposed to Accidents.

The best Method of defending them is by Hoops supported on Stakes, and a Covering of Canvas; thus there is Air enough, and the Time of drawing the Canvas over them is only at those Hours, when none look at them: the Morning and Evening are the Times for viewing Flowers, not only as they are most fresh and vigorous at those Times, but that a full Sun is not the proper Light for distinguishing their Colours.

The earliest Flowers of Spring are past, and these we have just named supply a middle Place between their Season and that of Summer Plants. While they are protected to keep them in flower till the Succession is ready to come in behind them, Care must be taken of the Roots of those autumnal Flowers, and of the other Plants which are to follow.

The Amaryllis's, and several other of the autumnal Flowers we have described in the preceding Numbers, are now in a Condition to have their Roots taken out of the Ground. Let this be done with the same Care we directed for the Tulips; and let them have the same Advantage of drying gently upon Mats, in an airy Place, out of the Reach of the Sun.

When they are sufficiently harden'd they must be ty'd up in Parcels, and preserved till the Time of planting them, toward the End of Summer.

The Plants which are to come into flower in the succeeding Months, are partly the Perennials and hardy Annuals raised in the Borders, and partly the tender Annuals from the Hot-Beds. Of these there are a large Store, the Double Balsam, French and African Marigolds, Gomphrenas, and the like.

We have from time to time directed the hardening of these to the Air; and it will be very proper now to think of planting out the strongest and forwardest of them.

They are, we will suppose, in Pots, and the Frames under which they stand have been accustomed to be open'd for the admitting Air to harden them.

Let the Places in the Borders where they are to stand be mark'd out; and let Holes of a full

Size and Depth; for the whole Ball of Earth contain'd in the Pot, be open'd for them.

The Evening of a cloudy Day is to be chosen for planting them, and let the whole Ball of Earth be shook out with them without breaking. The Surface will be cover'd with Fibres, which must be trim'd off, and the Ball set upright in the Hole.

The Mould must then be filled in about it, and settled by a gentle Watering; the Plants will be so far from receiving a Check from this Removal, that they will thrive the better.

The Earth kept about their Roots furnishes a great deal of Nourishment, and from the Fibres cut off at the Surface of the Lump, there will shoot out innumerable others into the new Mould. If the Weather be tolerable they will thrive upon this surprizingly.

Some Weeks ago we directed the sowing several of the hardy Annuals in Patches, upon the Borders where they are intended to remain. These will be by the present Week in some Forwardness, and as they come early they will soon be past the Beauty of their flowering. There will be wanting a Succession and Supply, and there are many Kinds which will now grow from the Seeds very well.

In distinct Parts of the Borders let there be now a fresh sowing of the former, and such other Kinds as will rise under the same easy Culture.

The Seeds must be put into the Ground in the Manner we directed the others, and all the Difference of Management must be more free and frequent Waterings. Nature allows fewer Showers in this advanced Part of Summer.

The Kinds we would advise for this Weeks sowing are Lobels Catchfly, the Dwarf Lychnis's, the Small Convolvulus, with some Lupine, Sweet and Tangier Pease.

The Hyacinth Roots are now to come under a very careful Management. Let the Gardener recollect what we have just said of the Tulip, for Nature is uniform in her Productions, and the Root of one bulbous Plant fares as that of another after the Time of flowering.

Let the Gardener at this Time observe the Leaves of those fine Hyacinths which are past flowering, he will find them soon begin to decay; and when it appears that the Roots send them up no more Nourishment, they are to be taken out of the Ground. They must not be now laid in the Air to dry, for they have a great deal yet to receive from the Ground.

When the Roots are up, let the Mould of the Bed be stirred and prepared for laying up into a kind of Ridge.

Let the Roots be carefully laid into this Ridge, not

May. not set upright as if for growing; but laid sideways, nearly flat, and with the Bottom somewhat highest. All the Root is thus to be cover'd with Earth, and the Leaves are to be left out, hanging down by the Side of the Ridge. Here the Stalks and Leaves will thoroughly decay, and the Roots as we have observ'd of the Tulip kind, will all this Time be swelling and gathering Strength and Fullness.

When the Leaves and Stalks are entirely with'd, the Earth must be open'd, and the Roots taken carefully out and clean'd. They must then be spread on a Mat in an airy Room, to harden a little; and this done, they may be put up in Boxes till Autumn.

Something there is curious and interesting in this Subject of bulbous Roots: we would have our Pupil a Master of every Part of his Subject, and we shall here explain it.

To the Student, the entering upon this Point will be pleasing, because he would know every Part of his Subject; and to the practical Gardener it will be useful, for he who best understands his Roots, will know best how to treat them. This Season of taking them up is his Time of observing their Structure, and we have here obtain'd an Opportunity for the Examination.

Of the Nature of bulbous Roots.

The Gardener sees that Bulbs are not of the Nature of other Roots; their Fibres do not shoot from their Body, but from the Base or Neck, and they require a different Treatment from all others.

They are indeed not Roots, but Provisions of Nature for the Defence of the Embryo Plant. The Fibres are the only proper Roots: these serve to the tender Plants which have them, as the Buds of Trees do to their young Leaves and Flowers: they surround, enclose, and cherish them; preserve them moist, and shield them from Injuries during the unfavourable Seasons; and having perform'd that Office, they perish: they are no more Roots in one Case than the other.

The Buds of Trees are composed of scaly Substances; and most bulbous Roots of Skins; some are of a tender, juicy, solid Substance: but in either Case the Root is a distinct Thing, and they fade in one as in the other Instance, when the Parts they at first enclos'd, expand, and meet the Air.

It was early a Question among the Dutch Florists, Whether the same Bulb that is planted in Autumn is taken up again the next Summer; or whether it in that Time decays, and Nature affords a new one, which the incurious Gardener supposes to be the same he planted.

These from a coarse and superficial Observation, discover'd that the latter was really the Case; that the Bulb which produces the Flower is absolutely exhausted and destroy'd by it; and a new one takes its Place. This Doctrine, better and more accurate Trials have confirm'd;

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and we find it conformable to Experience as well as Reason. May.

The bulbous Plants are therefore a Class in Nature distinct from all others; tho' artificial Methods have not so disposed therin.

CLUSIUS has shewn great Sagacity in his Enquiry into this Subject, tho' he did not perfectly comprehend the Course of Nature in the Operation: FERRARIUS, one of the most accurate Writers on Flowers, and of all the most elegant, has perfectly understood, and finely pictured it.

This Author found that in the innermost Part of the Bulb whence the Stalk and Flower rose, there was produced always another little Bulb, twin Brother with this more conspicuous one; and that this draws at that Time Nourishment, not only by the Fibres of the Parent Root, but even from its Substance.

Its Place is close to the Stalk of the flowering Plant; and when the flowering Season is over, and the Stalk decays, the original Bulb decays also with it, and falls off in useless Pieces.

The Nourishment which while the Plant was flowering was given to all that, now is sent all into the other, which swells and takes the Place of the decay'd one; and at the Time of taking up appear to the incurious Gardener the same he put into the Ground.

It is no wonder therefore that upon taking up the Bulb, the Stalk in its decay'd State is found adhering to its Side; for this is not the Bulb which originally produced it; nor is it wonderful the new one should be flatted on one Side, since there the other adhered or pressed against it.

This whole Construction will be seen in the Root of a Tulip when just preparing in the Course of Nature for its Spring-shoot.

Let a Root be then carefully cut asunder with a sharp Knife, and there will be found the Rudiment of the succeeding Plant, its Stalk and Flower envelop'd curiously among the folded Leaves; and to the Bottom of its Stalk there will be seen adhering on one Side a little Lump.

This is no Part of the old Bulb, or of the rising Plant: it is the Rudiment of the next Years Bulb; which now contains in it the Miniature Plant of the succeeding Year, too small for the naked Sight, but evident to the Microscope.

This grows slowly as the Plant of the present Year advances, for all the Juices are directed thither; but when that Office is perform'd, when the Flower has faded at its due Time, and the Gardeners Care has taken off the Possibility of Seeds, the Stalk and Leaves requiring no more Nourishment, all is sent to the small new Bulb. This swells and enlarges as the Substance of the other withers, and in a little Time becomes the Bulb taken up for the next Year's Plantation.

This in a practical Light shews the Propriety and Advantage of allowing Air to the Tulip Root when the flowering is past, and of laying the Hyacinth bulb horizontally in the Ridge, where the corrupted Juices of the thick Stalk and Leaves are not sent down upon the Root, and

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where

May. where the new Bulb grows: in regard of Curiosity, and a Knowledge of Nature. The same Experiment shews plainly that the Bulb is no Root; we see it fed by the proper Root, enclosing a Bud, and perishing in Succession when the Time of flowering is over. It is therefore no more than the first Shoot of a next Year's Plant well cover'd, and defended from the Injuries of the Air.

The Student will hence see the Reason and Propriety of LINNÆUS, in calling it the *Hyber-*

maculum of the Plant; and will allow the Justice of all his Observations; that whether this is coated as in the Onion, scaly as in the Lilly, solid as in the Tulip, or form'd of jointed Plates as in the *Latbræa*, *Martynia* and *Adoxa*, still its Nature and Office are the same; that it grows to the Root, but is not the Root; and that its Purpose is to defend the Plant, whose Embryo it contains, which served it decays, and gives place to another like itself, destin'd for the same Use in the succeeding Year.

May.



S E C T I O N II.

The Management of the SEMINARY, for this Week.

THE Plantation of the Spring is over, and now the Gardener's Care is required for those he has put into the Ground: if they be now neglected, all his former Pains are vain: Weeds will starve, or dry Weather parch them: these are the two great Articles of Attention, and these must be universal.

If the Season be showery, Nature does one half the Business, but the other will require the greater Attention; for the same Showers which refresh his Plantations water her own Produce, and Weeds rise up abundantly, and grow beyond Imagination.

These must be every where destroy'd. New-planted Trees have Difficulty to attract enough Nourishment where all is free and open, but they must perish where these rank Growths rise among them.

First then, let all the Beds of Seedling Plants and Trees be cleared from Weeds by Hand; and when the Earth is broken by pulling up the Roots, let there be given a gentle Watering, for it will take much more Effect at that Time than a natural Shower at another.

Then let the Rows of new-planted Trees be cleared. The Hoe will answer this Purpose when they stand close; but in other Places the Spade is vastly preferable.

Where there is Room for this, as according to our Directions for planting there will be in almost all Instances, the Weeds are more perfectly destroy'd by it than in any other Manner, and the Showers falling afterwards take more Effect.

In this Work the Roots of Couch Grass and Perennial Weeds must be pick'd out and thrown away; but the common annual Weeds, Ground-fell, Sow-thistles, and the like; which are slight

rooted and juicy may be bury'd in the Ground, there is no Danger of their rising to be troublesome again; and they rot and serve as Manure.

The Advantage of this is so great, that in the Spring Diggings where there have been no great Quantity of these annual juicy Weeds on the Spot, I have brought them from elsewhere and bury'd them in the Digging. They ferment, and not only give a Richness to the Ground, but a gentle Warmth at the same Time, which is highly serviceable to promote the striking of new Fibres from those tender Roots.

This Care taken of the growing Plants, let the Beds sown in Spring, and on which there is yet no Appearance of any Shoot, be examin'd.

They will require Defence and Watering; a few loose Bushes answer best of any Thing for the former Purpose; for at the same Time that they keep off Injuries, they in some Degree mellow the Ground.

In regard of the other, as there is always Moisture required for the Shooting of Seeds, the Temper of the Mould must be from time to time examin'd; and whenever it is found to be too dry for Vegetation, there must be allow'd a little Water.

There are no Rules to be given how often this must be done, for if there fall natural Showers they will save the Labour.

The Temper of the Mould will never deceive the Gardener; for as there is a Degree of Moisture necessary to the Shooting of Seeds, so there is to the Preservation of those tender first Shoots, otherwise they will be parch'd up and perish never to be restored.

May.

S E C T. III.

May.

POMONA, or the FRUIT-GARDEN.

TO the List of Fruits produc'd from the Forcing Frames at this Season, which are principally three Kinds, Apricots, Cherries, and Plums, we before added Strawberries from the Hot-Bed; and Art, with all her Labour of Experiment, yet gives nothing more.

The Management of the Trees and of the Ground may be continued as the preceding Week, and this gives us an Opportunity of introducing, from a very ingenious and faithful Correspondent, a pleasing Method of ripening Cherries at this

Time, and of bringing them to Table in a new Form.

Every one knows the Value of Fruit gather'd as it is eaten. We shall present the Reader with a Method by which it may be pluck'd at the Table, brought growing thither: by which a Cherry Tree becomes a Part of a Desert, more elegant than all the foolish Mimickry of Art, in painted Leaves and Paper Flowers: and, to recommend the Practice farther, with all these Advantages, it is easier and cheaper than any of the common Methods.

To the AUTHOR of EDEN.

S I R,

Elsham, April 28, 1757.

TO have Cherries in the elegant and pleasing Manner I have mentioned to you, the Method I follow successfully is this.

" In *March* I plant good Cuttings of the *Bird Cherry*, which, managing them as your practical Rules direct, and as Experience confirms, will be very well rooted by the End of the following *September*.

" The common Method is by Layers; but I have try'd both, and find the Cuttings every Way preferable.

" The first Week in *October* I plant these Cuttings in Two-penny or Three-penny Pots, according to their Size, and set the Pots up to the Rim in dry Earth.

" Thus the Frost is kept out, and they live thro' the Winter.

" The Season following I bud some of the earliest Cherries upon them, protecting them, as you direct, from Injuries.

" All will not succeed whatever Care is taken; therefore looking them over afterwards, where the Budding has mis'd, I graft them with the same Kinds.

" The third Year these Trees will be fit to force. There now appears a great Advantage in the Management before directed. As they are budded or grafted near the Ground, and are planted in Pots, the Shoot rises from a low Part, and the Growth is check'd by their being potted. They will not be at this Time above two Foot high, tho' full of Branches.

" The Place where they are forc'd need not be

" more than two Foot high. Any Heat will answer the Purpose of forcing them; Fire or Dung succeed alike; and I have obtain'd Fruit in the first Week in *April* from these Trees, under a common Hot-Bed Frame.

" This Year I sent in to Table, on the Eighth of *April*, one of these Trees loaded with Fruit in full Perfection, by this cheap and easy Management.

" The Tree is not above eighteen Inches high; and the Opinion of the Company was, That there was on it at that Time a Pound of ripe and excellent Fruit.

" I usually set the Tree in a handsome Pot, for this Purpose; and covering the Mould with fresh Moss, sprinkle over it some of the Spring Flowers. The Appearance is in the highest Degree pleasing, and excels the common Ornaments of Deserts, as Nature does Art on all other Occasions.

" This Method, confirm'd by the Practice of the present Year, and authenticated by so many honourable Witnesses, I have sent to you, without Restraint; being desirous that, if I can in any Particular improve or establish the Profession I follow, it may, by your Indulgence, be communicated to the Public."

I am, with great Respect,

Sir, your most humble Servant,

T. BARNES.

S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

C H A P. I.

Products now in Season.

BEsides the Remains of Winter's Produce, there are yet Radishes in the greatest Perfection. The early Lettuces are also very good; and there

are, by the Management we have mentioned, Pease and early Beans. These bear the forc'd Method of their early Production better than naked

May. naked Fruits, and, with good Care, may be very sweet and well tasted. To these we may add French Beans, and, for the Credit of modern

Gardening, Melons; some very fine and perfect ones appearing at this Season. May.

C H A P. II.

Care and Management of the Ground.

THE Gardener must transfer into his Kitchen-Ground what we directed for the Nursery: Weeding and Watering are as essential in this as in that Part of the Garden.

When Weeds are suffered to exhaust the Nourishment, the Crop must starve; and when Watering is deny'd, unless when Nature supplies it, all the fair Promise of the Crop will come to nothing.

Beans and Pease will be in Flower upon warm Borders, and these will require Watering more than any other Kinds, or more than themselves at any other Time. If this be withheld, the Blossoms drop without setting for Pods; and the sure Way to prevent it, is by giving the Waterings all over the Plants.

Let this be done with an even Hand; and let the Gardener see his Pot is in Order. Nothing is so common as a Flaw in the Nose, and nothing so destructive. In the perfect Condition of that Instrument the Water falls as in a Shower; but thro' these Cracks it runs in a heavy Stream, breaking down the Footstalks of Blossoms; and in Seed-Beds washing the Seed out of the Ground.

A great deal of sowing Work may still be done, both in new Kinds, and in providing for a Succession of the others.

Pease, Beans, and French Beans may now be planted very successfully. The Pease and Beans will require a good deal of Watering: less will answer for the French Beans, but they will require some.

The best Season for planting out Radishes for Seed is the present Week. The Success of the next Year's Crop depends entirely on this Article being now well manag'd, and there cannot be too much Caution.

First, let the Piece of Ground chosen for them be dry, and expos'd to the Noon Sun. Let this be well dug, and then Lines be mark'd out upon it a Yard Distance, and Holes open'd a full Spade Depth, at a Yard asunder, for the Reception of the Roots; and let the Mould be well broke at the Bottom.

This prepar'd, let the Gardener go to his Radish Beds, and take up Roots; let him chuse carefully such as he takes for this Purpose: they must be long, strait, and single Roots, with small Tops. No crooked or forked Root must be planted for Seed.

When fine and well-shap'd Roots are thus chosen, let one be planted in every Hole, the Mould carefully fix'd about it, and a gentle Watering given to promote the striking for Growth without any Check.

After this, the Perfection of the Seed is to be sought by all possible Means, and the principal will be two; digging now and then between the Plants, as this Space allows Room enough for it; and at first gentle Waterings, if Nature denies Showers.

These must only be allow'd while the Seed is swelling in the Pod; for afterwards, it is better to have it harden gradually.

This Care is easy, and the Reward is certain. The Gardener will next Year have the finest Radishes; and there is great Praise in excelling, even in common Things.

This Week let him go over his Plantation of early Cabbages, taking some soft Bals in his Hand for tying them up. He will perceive the Leaves of many of them turn in: this is the first Advance toward Cabbaging: they will proceed in it but slowly at first; and, if left to Nature, it will in general be a long Time before any Thing is done effectually: but here it is that Art is needed.

Nature is not to be forc'd, but assisted in her own Way: the Leaves that of themselves bend in, must be gently brought nearer, and ty'd together, and thus the inner ones will cluster and whiten.

Let two Pieces of dry light Ground be now dug up, and sow upon them Salsafie and Scorzonera. The early Sowings yield their Crops in haste in these two Kinds, and they soon after run up to Seed. These will come in at a more advanc'd Period, but as they come later they will keep longer in Order; for the natural Time of their Flowering being past before they rise to any Strength, they will not be in haste to run to Stalk.

Let the Week be concluded by a general Weeding. The Hoe must be employ'd where the Hand is not requir'd, and where the Spade cannot come; and there must be no Corner left unclear'd now, because many of the worst Kinds are getting to Seed; and, unless destroy'd before that ripens, the Encrease will be intolerable.

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A

COMPLEAT BODY of GARDENING.

NUMBER XXXV.

For the Middle of *MAY*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers now in their Perfection.

May.

THE last Number we devoted to the Tulip, whose pleasing Appearances under the various Distinction of Magnitude and Colour, the Botanical Student considers as Varieties, not separate Species; but whose Production and Culture make an essential Part of the Gardeners Business, and when well executed, of his Praise.

We here propose to him in the same Manner that elegant Variety of Fritillaries, which paint the Borders at this Season. These, like the Tulips of those several Names, are the original Pro-

duce of two original Species.

As the Gardeners Art has increased the Number of these Varieties, he has embellish'd them with new Colouring; so that the original Plants as gather'd from the Lap of Nature, with all their Chequerings, are poor in the Comparison.

These two original Kinds we shall first propose to the Reader's Consideration. They will give the Botanical Student a true Knowledge of the Nature and Characters of the Plant; and the Gardener will view them with the more Curiosity, when he knows all his others rise from them.

May.

I. COMMON PURPLE FRITILLARY.

Pl. 34.
Fig. 1.

This is an old Inhabitant of our Gardens, pleasing by its Particularity, and for being raised with little Trouble. Every Gardener knows it, and all the Botanical Writers have treated of it: they have called it *Fritillaria* and *Meleagris*; some without Addition, others with the Epithet *vulgaris*, common *Fritillary*.

LINNÆUS, more distinct and accurate than these, disclaims not only the trifling Epithet *vulgaris*, because it expresses no Character, and is equally applicable to the other original Kind, as frequent in many Parts of *Europe* as this; but sets aside also the Addition of those who thought they

Numb. XXXV.

had judged better in calling it *Fritillaria purpurea*; for in the wild State this Colour of the Flower varies; and in Gardens without End.

He calls it *Fritillaria foliis omnibus alternis*, Fritillary with all the Leaves alternate. This distinguishes it from the other in which the lower Leaves stand in Pairs.

Our Gardeners Names of Chequer'd Lilly, and Chequer'd Daffodill, are wrong even for the Vulgar, because they confound it with Plants, to which it is not ally'd. Tho' neither common, nor purple are so distinct as the LINNÆAN Term, they may very well supersede the Use of these.

5 M

The

May. The Root demands Attention. It is bulbous, firm, and composed of two unequal Parts. From the Middle rises a kind of Pillow, and from this the Stalk, whose Base is hung with many Fibres. The Substance of the Root is uniform, soft and white, and it is neither coated nor cover'd with Films.

The Stalk is round, upright, not very thick or strong, but ten Inches high; spungy within, and cover'd with a tough green Rind, ting'd often with brown and purple.

The Leaves are placed from Top to Bottom with perfect Irregularity, five or six, sometimes more grow on a Stalk; often fewer. They are long, narrow, of a deep green, hollow'd, sharp pointed, and of an Acid Taste.

From the Top hangs one large Flower: Culture gives many, but we treat here of the Plant in a State of Nature; or little removed from it in common Gardens. This bends its weak Stalk, and the Mouth opens to the Ground. It is large and extremely beautiful, as well as singular. It rises naked from the Stalk, without Cup or any other Defence. It is very large in Shape like a Bell, wide at the Base, and form'd of six Petals, which stand parallel, and are pointed at the Ends.

Near the Base of each of these is an oblong hollow, containing a Drop of Honey Juice. This is the Nectarium: each Hollow having its Gland for the Secretion of that Fluid.

Within the Flower are placed six Filaments. They cling about a single Style, and they have oblong Buttons.

The Flower is follow'd by a smooth, oblong Seed-vessel, of three Valves, which holds in three

Cells numerous flattened Seeds, roundish, and placed in a double Series. May.

The six Filaments shew the Plant one of the *Hexandria* of LINNÆUS, his sixth Class; and the single Style one of the *Monogynia*.

The Colouring of the Flower even in its wild State, is not without its Changes: and it is in all beautiful. The general Tinge is purple, chequer'd with various Degrees of red and white.

The Variegations are not disposed at random as in the Generality of painted Flowers, but placed in regular little squares; they are more distinct on the Outside of the Petals, for within the Flower glows with a more uniform purple down the Middle of each: on the Outside there also usually runs a Rib of a yellowish Hue, adding no little Grace.

This is the Appearance Nature gives the Flower in the most favourable Soils; but from a Variety of Accidents it often declines from this its natural Lustre. The purple grows faint, the yellow greenish, and the Variegations fade one into another. Always there remains, however, a great deal of Beauty.

In poor Soils the Plant will be small, and the Flowers nearly or entirely white.

Of this Variety in Nature Culture takes Advantage; and what in her is Imperfection raises into Beauty. 'Tis so in the Tulips of which we have last treated; and we shall shew in many other Instances, that what Changes Nature makes in the Flower of a Plant in a starving Soil, Art does by frequent Removals; and the Mould all the Time being rich to the Height, the Changes are all beautiful.

2. PURPLE PYRENÆAN FRITILLARY.

Pl. 35. A short Description will explain this Species; Fig. 2. whose general Form and Characters are the same with those of the preceding Kind: it's most obvious Difference, in the Size and Colour of the Flower.

The Root is a double Bulb, soft, fleshy and naked. In the wild State it is small, but in Gardens it often exceeds that of the other.

The Stalk is slender, upright, green, and beset with many Leaves. These are long, narrow, sharp-pointed, flattened, and of a fresh green. They stand irregularly on the upper Part of the Stalk, but on the lower Part in Pairs. 'Tis hence LINNÆUS names the Species.

The common Writers have called it from the Smallness of the Flower, *Fritillaria flore minore*, from its Colour, which is a dusky blackish yellow; *Fritillaria flore obsoleto, luteo nigricante*; and from its usual Place of Growth, the *Pyrenæan* and the *Aquitain Fritillary*.

Our Gardeners according to the Degree of Blackness, or of yellow in the Flower, call it the Black

Fritillary, or Leather Coat. LINNÆUS, the most correct of Writers names it, *Fritillaria foliis infimis oppositis*, Fritillary with the lowest Leaves placed opposite.

One Flower as in the other hangs naturally from the Top of the Stalk; and it is bell-shap'd, as in that; and form'd of six Petals; these turn their Edges a little upward, and are variously stain'd with yellow; the Ground Colour is a dusky blackish, and there is occasionally more or less of the yellow.

The Edges that turn up shew a yellowish Hue: this with more or less Mixture of green is the Colour of the whole inner Surface; the Flower is there more glossy than without; and the whole is mark'd with irregularly chequer'd Spots of purplish. These are most distinct toward the lower Part of the Petals.

These Flowers have their Nectaria, their Filaments and Style as in the other; and are succeeded by a like Seed-vessel, only smaller.

Culture of these FRITILLARIES.

These two Kinds are Native of many Parts of Europe; and love a rich and somewhat moist Soil, where they have a little Shelter. The Foot of a

Hill where there runs near some little Spring, and a Wood defends the Spot from the North, affords them their full natural Perfection.

From

May.

From Plants which grow in such Soil and Situation, should be selected Seeds for raising them under yet more favourable Circumstances in Gardens; and from these will be produced the several elegant Kinds which follow.

The strongest of these Plants, or of the same Kinds in Gardens, should be mark'd while in flower, and the Seed-vessels cut off when they are ripe; this will be in the latter End of *July*. Let them be laid on a Shelf three Weeks to harden: then let the Seeds be taken out, and spread for a Week more; and at the End of this Time, which will be the latter Part of *August*, let them be sown upon a Piece of good Ground in the Nursery, open to the Morning Sun, but defended South and North.

Here let them be allow'd the common Ma-

nagement; weeded from time to time, thin'd May. where they have risen too close, and water'd often a little at once.

In the Beginning of the following Autumn take up all the Roots: plant them at three Inches Distance on a fresh Bed, in a like Situation, and allow them the same Care.

They may remain in this Bed to the Time of their flowering; which according to the Management, or other Accidents, will be the third or fourth Year. Then the best Plants must be mark'd; and at Autumn their Roots taken up, and planted in another Bed at five Inches Distance.

There will be thus produced many very handsome Flowers; and from these will be rais'd with Ease the following elegant Varieties.

3. ISABELLA FRITILLARY.

Pl. 35.
Fig. 3.

This is a very elegant Variety produced from the common purple Kind, and less distinct in Appearance than many of the succeeding. The Difference principally consists in the Firmness of the Stalk, and Colouring of the Flower.

The Root is white and fleshy.

The Stalk round, and toward the Bottom purplish.

The Leaves are very narrow, few in Number, placed irregularly, and of a pale green.

One Flower bends the Top of the Stalk, and this does not exceed the common Kind in Bigness, but greatly excels it in the Colouring.

The Base is wider and more rounded.

The Petals are broader in Proportion to their

Length than in that Flower, and no Part of the Edge turns up.

Two Colours diversify the whole; these are an elegant light red, and a clear green. They are disposed in large square Spots interchangeably, and the Edges of those regular Figures are very distinct.

The Colours are brightest toward the Ends of the Petals, and more obscure nearer the Base.

The great Merit of this Flower is the Brightness of the red, and the Distinctness of the Spots.

It is sometimes produced from a first sowing; but in greater Perfection from the sowing again the best Kinds rais'd, as we have already directed, from wild Seeds.

4. GREAT UMBELLIFEROUS FRITILLARY.

Pl. 35.
Fig. 4.

This stands distinguish'd eminently from all the other Kinds by the Strength and Stateliness of the Stalk, the Breadth and Firmness of the Leaves, and the Size and Number of the Flowers.

The Root is large and white.

The Stalk rises to the Height of eighteen Inches, and is purplish at the Base, green upwards, and of a firm Substance.

The Leaves are considerably broad, long, sharp-pointed, often twisted, and of a deep green.

At the Top of the Stalk there are three or sometimes more Flowers; very large, and conspicuous also by the Boldness of their Colouring. They do not regularly hang down as in the other Kinds, but some droop more than others, and not unusually one or more are nearly horizontal.

The Base is swelling and round; the Petals are broad and sharp-pointed, and the Flower opens regularly without any turning up of the Edges.

The Colours are very fine, a deep lively purple, and a very agreeable greyish brown. This latter is the Ground Colour, and the Chequerings are of the purple. The whole Flower is of a glossy, polish'd Surface, and has some Lines of a yellowish green within. It rises from the Seeds of the common purple Kind, but rarely perfects any itself. Nature is too much exhausted by the Number of the Flowers to bring her last Work to Perfection. Therefore when the Gardener has obtain'd a Plant of it from the Culture we shall direct, he must encrease his Store by Offsets.

5. SMALL UMBELLIFEROUS FRITILLARY.

Pl. 35.
Fig. 5.

As the former is the utmost Luxuriance of Culture in the common Fritillary, this shews the Effect of extream Nourishment, and well regulated Plantation in the *Pyrenaean* Kind: it is a very singular and elegant Variety, and shews that the less conspicuous wild Plant, is capable of perhaps equalling the finest under the same Management.

The Root is small, and whitish.

The Stalk is firm, green, and eight Inches in Height: Culture rarely makes any considerable Alteration in this Article, though it covers the whole Length with Leaves, and crowns its Top with numerous Flowers.

The Leaves are long, moderately broad, and of a fresh and lively green: they are hollow'd, often

May. often wav'd or twited, and they stand irregularly, except at the Bottom, where they commonly are found in Pairs.

At the Top of the Stalk are plac'd four, five, or six Flowers, in an elegant Cluster. Each has its separate slender Footstalk, and they all droop as in the other Kinds. The Points of many Leaves rise above them, and give the Whole somewhat the Appearance of the Crown Imperial. This is not wonderful, for the Crown Imperial is also of the *Fritillary* Kind.

The Flowers are small, hollow, angulated at

the Base, and turn'd up a little at the Edges of the Petals. May.

The Colour is a deep dusky Purple, with Variations of a yellowish green. On the Outside the Colours are less distinct; on the inner Part they are much more regularly dispos'd; and the whole Inside is of a polish'd Surface.

This is produc'd from the Seeds of the *Pyrenean* Kind; but, like the last describ'd, it must, when once obtain'd, be propagated farther by Roots, for it scarce ever ripens any Seeds itself.

6. YELLOW ITALIAN FRITILLARY.

Pl. 35. This is a Variety from the Seed of the common
Fig. 6. Purple Kind, but it varies greatly and elegantly from it in the Colouring of the Flower, and even in the general Conformation of the Plant.

The Root is large and whitish.

The Stalk is round, fleshy, and firm, but rarely exceeds eight Inches in Height.

The Leaves are remarkably broad, less hollow'd than in the other Kinds, and obtuse at the End. From the Top of the Stalk hangs one

Flower. It is very large, and particularly beautiful; round at the Base, regularly open at the Mouth, and chequer'd all over with perfect Regularity.

The Ground Colour is a very fine Yellow: the Spots of a deep Crimson, enclining a little to Purple; and the outside and inner both have a glossy Surface. This ripens Seeds in great Perfection, and they should be sav'd with Care.

7. GREEN FRITILLARY.

Pl. 35. This is a feminal Variation of the *Pyrenean*
Fig. 7. Kind; and, if less worthy to be cultivated than some others for its Beauty, it has a Singularity that will very well supply the Place.

The Root is large, and in favourable Soils will swell to a Bigness beyond all Thought.

The Stalk is round, upright, green, and spotted with purple and brown.

The Leaves are moderately broad, and of a fine fresh green.

The Flowers hang from the Top of the Stalk, often two, rarely more; sometimes only one; and tho' each, when there are more, has naturally its Footstalk separate, the two will sometimes

unite into a broad flat common Pedicle, and the Flowers grow from its Top together. This is a very singular and not inelegant Appearance.

The Flower is large, and compos'd, as in the others, of six Petals: they are rounded at the Ends, and naturally turn up a little at the Edges.

The Colour is a dusky yellowish green, spotted on the Outside obscurely, and within more distinctly with a deep blackish Purple. The Spots are not dispos'd in Chequers, as are most of the others, but they are thrown together with a tolerable Regularity. This ripens its Seeds freely, and they should be sav'd for Sowing.

8. SNOWY FRITILLARY.

Pl. 35. This is a Variety of the common Purple *Fritil-*
Fig. 8. *lary*, and tho' less specious than the generality of the others, should be preserv'd by all who cultivate this Flower, for the Variety it gives among them.

Nature shews it in those Places where the Plant is half starv'd; as we see for the same Reason our Blue-bell Flower, and many other wild Plants, whose Flowers are naturally colour'd, become white thro' Want of Nourishment; but in those Places the white is dead and dusky.

In Gardens, where some Accident in the Growth of the Seed brings on the same Change in the Flower, while there is no Want of Nourishment, the White becomes Satteny, bright, and delicate.

This is the Flower the Curious should preserve.

The Root is small. The Stalk is round, weak, pale, and eight Inches high.

Three or four Leaves stand at Distances upon it, and these are narrow, long, hollow'd, sharp-

pointed, and of a lively green.

From the Top hangs one Flower: this is large, broad at the Base, and somewhat angulated, plain at the Opening, and form'd as usual of six Petals, whose Extremities are pointed.

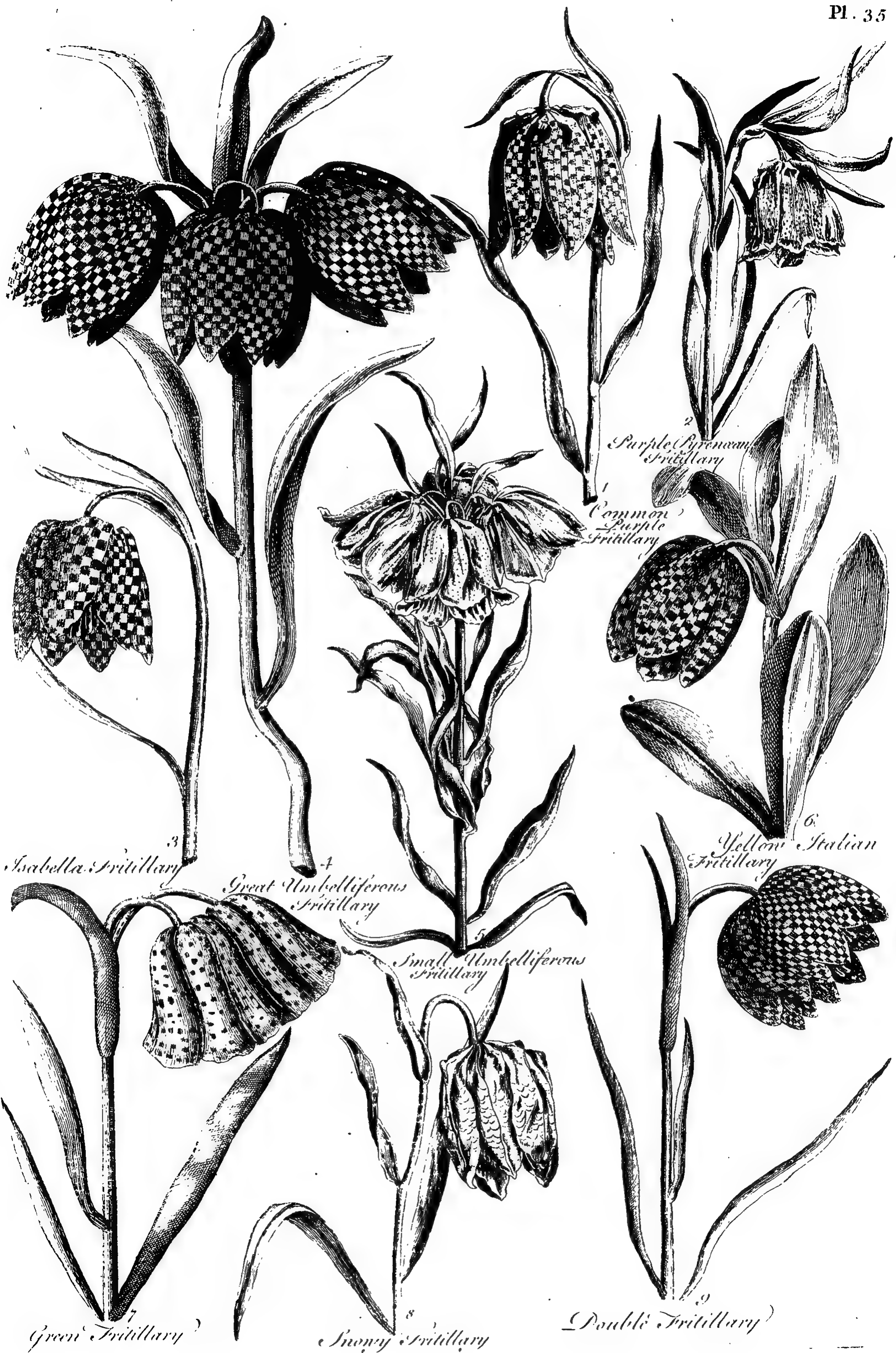
The Colour is often a pure and perfect White, like Snow. Sometimes it has a Creamy Tinge, and some Flowers shew a pearly grey. All very elegant, with a lively Aspect and glossy Surface.

The same Seeds will produce others, which are dusky, and want the proper Lustre; but these should be destroy'd.

The White, which is generally uniform and entire, admit sometimes a faint Variegation. This is not in Chequers, but in a kind of little Crescents.

It ripens Seeds, but they need not be sav'd. I have, from repeated Experience, found them weak in the Principle of Growth, and there is no Certainty of their producing the same Flower.

9. DOUBLE



2
Purple Pyrenean Fritillary

1
Common Purple Fritillary

6
Yellow Italian Fritillary

5
Small Umbelliferous Fritillary

4
Great Umbelliferous Fritillary

3
Isabella Fritillary

9
Double Fritillary

8
Snowy Fritillary

7
Green Fritillary

May.

May.

9. DOUBLE FRITILLARY.

Pl. 35.
Fig. 9.

We close the Account with a Variety of the same common Purple Kind, which demands great Attention.

The Number of Petals in the Flower have been observ'd to be alike in all we have yet nam'd, however the Flowers themselves may have been multiply'd upon the Stalk: in this luxuriant Culture, takes its natural Course as in many other Flowers, and encreases the specious Elegance, by adding to the Number of those constituent Parts.

The Root is fleshy, white, and large.

The Stalk is upright, firm, and pale; sometimes ting'd considerably with Purple.

The Leaves are narrow, and of a pale but pleasant green. They stand irregularly, and are not very numerous.

One Flower terminates the Stalk, and it hangs drooping, tho' usually less so than the common Kind. It is very broad in Proportion to its Length, and is compos'd of twelve Petals, sometimes more. But most usually it is the double Quantity of the common Kind.

The Colour is throughout a dusky Purple, but there is great and beautiful Variegation. The Ground Part has the Purple faint, and mix'd with a great deal of green. The Spots are perfect Purple, and they are regularly square, and plac'd in the exact chequer'd Order.

This Flower will ripen Seeds, but they have not the Strength of those from the single Kinds, nor will they regularly produce double ones. It should therefore be encreas'd by Off-sets.

CULTURE of the FRITILLARIES.

These and the other *Fritillaries*, describ'd in our preceding Numbers, are all produc'd originally from the two Kinds here first describ'd, the common Purple and the *Pyrenean*.

We have added to their Descriptions the Culture they require, and from the Plants so rais'd the Seeds are to be collected for the Production of these more singular and more conspicuous Flowers.

In all the bulbous Kinds the Seedling Plants shew a Variety of Colouring. It will be so here. The Plants rais'd, as we have directed, from wild Seeds, or those of the wild Kinds, unalter'd in the Garden, will shew some Flowers better, and others worse colour'd; and some Plants strong, and others weak.

We will suppose this first Care over, and the Gardener stock'd with these Kinds: a Bed of the common, and another of the *Pyrenean*.

1. The Seed.

Let him watch these from their Beginning of Flowering to the End, for some will be earlier, some later; and mark for Seed the boldest and most promising Kinds, by tying them up to Sticks. This ensures the Plants without Mistake, and the Seed will ripen the better for the Stalk being kept from rocking with the Wind. The only Care must be that the Root is not hurt by the thrusting down the Stick.

The Plants to be selected, are those which have a strong Stalk with a few Leaves on it; and have the Flower large, wide at the Bottom, and regularly opening at the Mouth, with the Points the least sharp that can be.

In the common Purple they should be quite strait, neither turning in nor out; and in the *Pyrenean* they should all regularly turn up a little of the Verge.

These are the Marks to be observ'd for saving Seed, as to the Colouring it is not material: the Chance of Culture gave it at the first, and will continue to give it from whatever Kind: in this the Seed takes no certain Effect; but the Bigness

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and Shape of the Flower, and the Firmness of the Stalk, are often influenced by it greatly.

When these are mark'd, the usual Care must be taken to make them bring their Seeds to good Maturity. The Plants all about them must be cut down; and the Mould stir'd frequently, and water'd a little at a Time, and often.

The Seed-vessels must be cut off when full grown, and harden'd with a Part of the Stalk, and laid on a Shelf a Month: the Seeds must be then air'd loose about a Week, and by that Time they will be in perfect good Condition for sowing in a proper Soil.

2. The Compost.

Mix one Barrow of Pond-Mud with two Barrows of rich dry Pasture-Earth, and half a Peck of Hens Dung. Work these well together, then add half a Bushel of River-Sand, and break them well again. The Whole will now come into a fine, mellow, and equal Mixture.

The best Time for this is as soon as the Flowers are mark'd for Seed. Let it be spread a Foot thick, in a shady Place, and once in ten Days turn'd.

In the Middle of *August* make two or more Boxes of rough Boards, a Foot and half deep, and of such Bigness as can be conveniently manag'd. Bore four or five Holes in the Bottom of each; lay some Oyster-shells over the Holes, and pour in the Compost, till they are nearly fill'd.

Set the Boxes where they have the Morning Sun, and scatter on the Seeds pretty thick. Sift upon them a Finger's Breadth of the Compost, and lay over the Whole a light Covering of Pease Straw. Let this be taken off when the Mould is dry, that it may be water'd. This must be done with a light and regular Hand; and no Moss or Weed be suffer'd to appear upon the Mould.

In Winter the Boxes must be remov'd to some Place where they will be defended from the North, and open to the Sun. In Spring let them be plac'd where they were at first.

When the young Plants have so much Strength that

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May. that the strongest can be discern'd from the rest, let the others be clear'd away where they rise too thick, and only such a Number left in each Box as can be supply'd with Nourishment.

Keep the Surface clear from Weeds, and water it whenever the Mould is too dry. This must be the Management while the Plants keep their Greenness.

When the Leaves are faded, let half an Inch of the Compost, that was left, be sifted over them, and let them have the same Care they had the preceding Year.

The next Summer, when the Leaves are faded, let the Mould be all taken out of the Boxes, and sifted. The Roots will be thus separated, and they must be immediately planted in a Bed of the same Compost, shelter'd from the North and from the Noon-day Sun.

They should be set here at four Inches Distance, and left to flower.

There will be a great Variety : but let none the first Year be despis'd.

When the Leaves are decay'd they must be taken up, and immediately planted again, at five Inches Distance, in fresh Compost. This will give them a great Advantage for the next Year's Flowering, and the Gardener will then be able to make some Judgment of their Value.

3. Of the Management of the Roots.

After the second Year's Flowering, which is usually the fourth from Sowing, the Roots are to be consider'd as arriv'd at full Maturity, and to be treated differently, according to the Distinction we have laid down of those which ripen Seeds, and such as are to be increas'd by Root.

For this Transplanting therefore two Beds should be provided, the one larger, for receiving those which ripen Seeds, and the other for the Kinds which are to be increas'd by Root.

For this Purpose, let him mark by separate Sticks, while they are in Flower, those which have more than one Flower upon the Stalk, and those which have more than six Petals in the

May. Flower. No Matter whether there be three or four Flowers in the first Case, or twelve Petals, as we have described in the perfect double Flowers. If there be more than one upon the Stalk, or more than six Petals in a Flower, continued Culture will bring them to the full Perfection.

The Bed must be very well prepar'd for these, for they are, after this Plantation, not to be remov'd for three Years. Let them be set at ten Inches Distance in the new Compost, and the Ground kept clear from Weeds, and never suffer'd to be too dry.

This will be all that is requir'd in the Summer Months ; but every Autumn there should be half an Inch of fresh Compost sifted over the Bed ; and in the severe Frosts the Ground should be covered with Pease-straw.

These being dispos'd in that Manner, the larger Bed is to be prepar'd for the others. They must be taken up as soon as the others are planted, which should be when the Leaves fade ; and they are not to be kept out of the Ground, but immediately set again. They should be allowed eight Inches Distance : and this Management repeated every Year, giving them always fresh Compost.

Thus will a Foundation be laid for the most perfect Stock of this singular Flower.

The many flower'd and double Kinds, will, during their three Years standing, grow to full Perfection ; and when they are, at the End of that Time, taken up, a Number of Off-sets will be found ready for separating by way of Increase.

The others, in the same Manner, will flower each Year more and more perfectly : every Season the finest of them should be mark'd for Seed ; and each Autumn there should be a new Sowing.

This is the Method practis'd by the *Dutch*, who exceed all *Europe* in this Flower : and there not only is the Amusement arising from so continual an Improvement, but they make a very considerable Profit, by selling the Roots they can spare, after selecting the finest for their own Gardens.

C H A P. II.

The Management of the Flower-Garden, for this Week.

THE best Beauties of the Flower-Garden are now in their great Glory, every thing therefore should be consult'd that can continue them in that Perfection ; and every Part of the Ground kept in Order, that the Eye may not be disgusted in one Place, while it is entertain'd in another.

Let the Caution of shading the Beds of the finer Kinds, be observ'd as we have directed already, and let them occasionally have Water.

The Borders, the Grass, and the Gravel-Walks, should all be now kept in the most perfect Order :

the Gravel roll'd often, and clean from the least Appearance of a Weed ; and the Borders not only weeded, but stir'd and rak'd once in three or four Days.

He who does this, must be very well acquainted with the Places of the Flowers, that he do not hurt them ; and, with that Caution, all will be pleasing and useful. The Surface will have a continual Look of Culture, and the Roots will be refresh'd.

Take up the Roots of the fine *Colchicums* this Week,

May. Week, and clean them: then spread them out on a Mat in a dry airy Room, and when they are a little harden'd, put them up till the Time of planting, which should be about nine Weeks after the taking them out.

A great deal depends upon the Management of Roots in this respect, and the different Kinds in general require a various Conduct. If these be kept too long out of the Ground, the Flowers not only will come late, but they will be poor: the Tulip requires a longer Time of being out of the Earth; and the Fritillary, of which we have treated particularly in this Number, will scarce bear to be out at all.

There is in many of the bulbous Kinds a Time of Rest between the Decay of the Leaves, and the shooting for the next Bloom.

If this be carefully attended, and the Roots kept so long out of the Ground, the Purpose of Nature is more perfectly answer'd than it can be while they remain under the Earth. No wet warm Seasons can set them to growing at an improper Time; nor cold Damp rot them.

When committed to fresh Earth after this absolute Rest, they draw their Nourishment with more Vigour, and the Bloom is always finer: but if the due Period be not observed, all is the worse for taking them up. Practice, not reading, must instruct us in this nice Point; for hitherto they who have written have either mistaken, or concealed it, in many Instances. What we lay down as the Rule is the Result of Trial; and if it differs from theirs, 'tis because we have found it better.

The tuberous rooted Flowers of the same Season with the Colchicums, will be at the same Time in a Condition to be removed. These are not to be taken up and laid by as the others; but planted afresh like the Fritillary, as soon as taken out of the Ground.

They have a Time of Rest as well as the others, and it is marked out to the Gardener by the same Signal, the Decay of their Leaves.

This is the Time when the Vegetation of one Season is over, and that of the next is not begun. This therefore is the Time when they best bear Removal; and being planted in a fresh Soil immediately, they are encouraged to shoot strongly for the autumnal flowering. The autumnal Cyclamen may stand as an Instance for this Practice.

This Week let the Gardener see in what Places the climbing Plants may be proper; and commit to the Ground their Seeds. They will have a Chance still of coming to Perfection; and if wet follows, will often be the finest of their Kind in the Ground. The Indian Cress, the larger Kinds of Convolvulus, and the Sweet-pea will all be proper.

The Carnations will now shew the Buds for their flowering. This should be watch'd, for it is a critical Time, and a great deal of Advantage will arise from a careful and judicious Management; what is to be done depends on this one Principle.

The Carnation is so large a Flower, and has

such a Multiplicity of Petals, that it requires the full Nourishment which can be convey'd to it from the Quantity of Mould its Pot contains.

Therefore let the Plant be now examin'd carefully. Let all decay'd Leaves be taken off. Let a small firm Stick be thrust down as close as can be to the Stalk, without hurting the Root: and to this let the Stalk be ty'd between every Joint. The Stick and the Worsted should be as near as possible of the Colour of the Stalk to conceal this.

Let the Gardener then examine whether there be more Buds than one: if so, they must be displaced now before they exhaust the Nourishment; for the Earth being barely sufficient, with the best Management, to bring one Flower to its full Perfection, two must starve each other.

Let the Mould be stir'd gently at the Surface, and some fresh rich Compost sprinkled over it; and let the Pot be set where there is moderate Sun, and let it have frequent Waterings.

When the Bud is near bursting, the Stick should be cut off just below its Base; and it will thus be supported perfectly, and disclose its Fullness without Constraint.

Let the tenderest of the Annuals raised in Hot-beds now have their last Removal. The rest are by this Time in the open Ground, these must not be trusted out of Pots; and they should now be allow'd such as are of a due Bigness. These must be filled with the richest Garden Mould, unless the Plant be such as require a particular Compost; and they must be planted into them with all possible Caution.

The Pots must then be set upon a Hot-bed that has lost its first Heat, and it will be a great Advantage to them if a Quantity of light dry Mould be thrown in between them.

The Tuberose is a Flower of so much Beauty and Fragrance, that all Care should be taken not only for its flowering in good Condition; but for a Supply of one Set after another.

The first Roots we have directed to be put into a Hot-bed will be coming very forward, and the several successive Plantations will follow one another according to their Time.

We now advise the last: let some good Roots be selected, and a Hot-bed chosen that has moderate Warmth. Those we order'd to be planted earliest will be in flower in the Beginning of next Month; the others will come in their due Time afterwards, and these which are planted now will flower about *October*.

There is nothing better for planting them in than rich Garden Mould. The Roots must be well examin'd before they are put into the Pots, for by this Time many will be decay'd. When found to be perfect, the outer Skins must be taken off; and if there be any Off-sets, they must also be taken away.

The Root thus clean'd, must be planted in a small Pot of this Mould, and cover'd about a Quarter of an Inch.

The Roots being all planted, let the Pots be set upon the Mould in the Hot-bed; and a little of it just gather'd up about their Bottoms. Then

let

May. let the Glasses be let down. Till the Leaves begin to appear, let them have no Water; and only a little Air, by opening the Glasses in the Middle of the Day.

When the Leaves appear they must be water'd, and this repeated every two or three Days, and they must be harden'd to the Air.

Their Management after this must be the same with the others: they must be brought up by repeated Waterings to a Condition of flowering; and then they must be kept out of the Sun, and out of the Way of other Accidents. They will thus continue a long Time in flower.

We have shewn how the Tulip, and other elegant Flowers, preserve their Beauty when kept from the Sun and Rains, and 'tis the same in

May. this; indeed in all. Winds rock the Stalk, it becomes loose at the Root; and the Fibres torn from their Hold, afford no Nourishment. This Way it decays: Rains beat it down, or drench the Flowers irrecoverably: beating in the Dust of the Buttons upon the Surface of the Petals. This Way also the Beauty is all lost; and often the Lodging of a little Wet destroys it yet more effectually. The Sun exhales the Juices, and draws on the ripening of the Seeds.

These three Ways the tuberous, and these all other Flowers, are brought to decay. Once for the whole Number therefore let the Gardener take this Lesson; fasten them up to Sticks to guard against the Winds, and shelter them from Sun and Showers, except when both are moderate.



C H A P. III.

The Management of the Green-house and Stove.

THE Season now points forth the bringing into the open Air, those Natives of warmer Climates which we have been oblig'd to shelter from our Winters: and to admit more Air to those which will not at any Time endure the free Breath of our Country.

The Green-houses are to be emptied into proper Parts of the Garden, and the Stoves to be refresh'd with proper Airings.

This Week let the Orange, Lemon, and Citrons, and all the others of their Quality, be brought out into a warm and shelter'd Situation; where they will stand open to the Sun, and where no cold Winds reach them.

The Preparation for this should be made a few Days before; and if the Gardener please, he may begin with that the first Days of the Week, and bring them out at last.

We have told the Method of cleaning them, let it now be repeated; the better it has been done before, the less Trouble it will give now; but still let it be done: no Filth should be left upon any Branch, no decay'd Leaf on the Tree.

This done, let the Surface of the Mould be stir'd; and lay on it an Inch Thickness of some light Compost, mix'd with a Handful of Wood-foot. Give a gentle Watering when all this is finish'd: not only the Mould must be water'd, but the whole Shrub: it cleans those Leaves the common Care did not reach, and refreshes the Shrub.

This done, let all the Air that can be admitted have free Course into the Green-house for three or four Days; and then in a mild Evening bring them out, and place them where they are to stand for the Summer.

In the same Manner treat all those which bear absolute Exposure.

There will be yet a Number which will not stand the Cold of our Nights unshelter'd, but yet will at this Time endure a great deal of the natural Quality of our Climate. These will require a great deal more Air now than they had in Winter, and there will be Opportunities of giving it.

The greater Part of the Green-house Plants are those we have treated of already, which will now require absolute Exposure: these taken out the others will have Room; and they must now be brought to the Windows, and have as much Air as possible with any degree of Defence: all Day they must be perfectly exposed at the Windows, except two Hours in the extreme Heat, when that is sultry, and there are no Clouds.

In this Time the Glasses must be a little shaded, at all others they may have the free Air; and the Building defending them from the Cold of the Nights, they will have Encouragement to grow freely and strongly, and be in no Danger of chilling. They will get a fresher and stronger Colour, and their Shoots will be more firm.

These should now be treated as the others, clean'd in every Part, freed from decay'd Leaves, and refresh'd by some new Mould, after stirring the Surface of that in which they grow.

This Care is all requir'd in the Green-house, and for the Plants which properly belong to it; those of the Stove are to come under Consideration. These will require Air, and they will be greatly assisted in their Growth by moderate Sunshine; but there are Days in which they cannot bear it entirely.

The moderate Hours the Glasses must be open'd, and free to admit that temper'd Warmth.

May. In the Evenings they must be clos'd to keep out the Cold that will attend even our warmest Seasons; and in the Middle of bright Days, when there are no Clouds, and the Sun has all its Power, the Glasses here must be shaded: else it wou'd exhaust too much.

Many of the most elegant Kinds in this Department will now require transplanting. We have directed such as have been rais'd from Seed, to be planted in little Pots, and set in the Bed. These, as they encrease in Bigness, will require more Compost for their Roots, and this is the Time to give it.

The Compost for each we have directed: we always advise more to be made than is immediately wanted, for it will be requir'd afterwards on these Occasions, and it gets Good by lying.

The Gardener knows that those which we have directed him to make for the particular Plants, of which we have treated, are not peculiar to them. 'Tis with these artificial as with natural Soils: each Plant has its proper Kind, but not every one a peculiar Mixture.

As the wild Plants which grow in one dry Soil, will also live in another, tho' they would perish in a wet one; and, on the contrary, the Plants native of damp rich Mould, would wither soon in Sand, but will yet grow in many Mixtures which have that general Character; so among those Plants we raise from foreign Seeds, each has a kind of Soil in which alone it will grow, tho' it be not limited to any one particular Mixture of that Quality.

Thus the Composts being understood, in Respect of their general Characters of light, rich, dry, mellow, and the like, that made for one Plant, may on Occasion be us'd for any other which is naturally the Produce of a Soil of that general Nature; tho' it would be Folly to attempt the raising it in one of a contrary Kind.

This rightly understood, will save the Gardener a great deal of Trouble. It would be endless to make and keep up one particular Compost for every Species he raises. Those we direct for the several Kinds here treated of, will serve all others; and in the present Instance, the Gardener may take, instead of the particular Compost made for that Plant, if it be exhausted, any one of those of the same general Kind.

Let him bring in, for this Purpose, a Pot of proper Size, and filling it three Parts with the Compost, set it up to the Rim in the Bed in the Stove.

Let it stand thus three Days: in that Time the Pot and Mould will both be brought to the same Temper with the Air of the Stove, without which the Plant would certainly be check'd, and might be lost, by the Removal.

Let the Pot of Compost, and that containing the Plant, be taken out of the Bed in the Evening of a mild Day, and the Compost pour'd out of the new Pot, except as much as will lie an Inch and half thick at the Bottom.

Then let the Plant be clean'd, the Stem wip'd, the decay'd Leaves, if any, pick'd off, and the Shoots, where needful, shorten'd. Let it be taken out of the small Pot, with the Ball of Earth entire, and the Fibres on the Surface trim'd: then let it be set upright in the Middle of the larger Pot, with its Ball undisturb'd; and let the fresh Compost be carefully pour'd in round it, till the Vacancy is fill'd, and the Ball covered about three Quarters of an Inch. This done, let the Whole have a gentle Watering, and the new Pot be set into the Bed as the other was. There will be no Check perceiv'd from this in the Growth even of the tenderest Kinds.

This done, let the Plants in general be carefully looked over. The Gardener has been sufficiently caution'd against suffering them to be foul, and he must now repeat his Labours to prevent it.

The Dust which gathers on their Leaves choaks up the natural and necessary Pores, and the Plant wants their Service. If this be permitted it grows sickly: the Juices stagnate, and when they stagnate they putrify: this makes them Food for Insects; and wherever that Food is, the little Myriads come. We see it in blighted Trees, and 'tis the same here.

Dust, which obstructs the Pores of these tender Plants, has the same Effect with Cold, that stagnates the Juices in those hardier Shrubs and Trees. Insects follow: the Vulgar have hence thought them generated of the Dust; but 'tis the same Thing to the Gardener, whether the Insects are produc'd from this Accident, or brought thither by it. Let him take Care to clean off the Foulness whenever he perceives it.

Let the Mould on the Surface in all the Pots be broke and refresh'd by a small Addition of some Compost of like Kind; and let the several Plants, according to their Nature, have now and then a gentle Watering, from a fine-nos'd Pot.

May.

S E C T. II.

The Management of the NURSERY, for this Week.

THE Business of Transplanting, which we have order'd in the Stove, may be continued also in the open Air, for certain Kinds, and on
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particular Occasions. In the Nursery of Flowering Plants for the next Year, this Business is to be manag'd with due Care.

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In

May. In our Numbers for *March* and the Beginning of *April*, we directed the sowing of Hollyhocks, and many other of the Biennial Kinds. These are to make their Appearance in the Garden the following Year; and they are to be prepar'd for it by proper Removals. They are now cluster'd in the Seed-Beds, and will naturally crowd and starve one another.

Let a Piece of Ground be dug up in a Part of the Seminary, open to the South-west, and where the Soil is not too rich. Let this be mark'd into as many Divisions as there are Kinds of these Plants; and Holes open'd at four or five Inches Distance, for the Reception of as many of them as it will be thought convenient to raise. Let the strongest of those from the Seed-Beds be carefully planted into these, and the Earth settled about them by a gentle Watering.

After this, they will only need to be kept clear from Weeds, and to have a few Waterings: they are to remain till the Middle of *September* in these Beds, and are then to be taken into the Garden, and planted where they are to remain, as we have directed in a former Number.

This Week let the Gardener look over his grafted Trees; and give them Liberty at the Bandage. He covered them with Loam, or fastened with Bafs, and there is now no farther Occasion for those Additions: they will be rather hurtful than serviceable; the Loam stopping the Pores of the Bark, where Perspiration is now required; and the Bandage pinching at the Stock, there will be Danger of the Winds breaking them off. Let the Loam be clear'd away, and the Bafs unty'd; and with a Flannel wetted in Water just made Milk-warm, let the Part be wash'd clean.

Wherever there is a vigorous Shoot from a Graft, it must now be secur'd by a Stake, and by careful tying up, otherwise the Wind will have too much Power for it; and very probably will tear it off.

The Seedling Trees which have been rais'd in separate Beds in the Seminary, will now require frequent Waterings. We have directed the Gardener before to weed them carefully from Time to Time, and the Watering must be given an Hour before Sun-set, and in a regular Manner.

Their Shoots are tender, and the Weight of too much Water may spoil their Shape irrecoverably. The smaller may also be destroy'd by it entirely; instead of being assisted in their Growth, their Roots being bared, and the Sun afterwards

parching them up.

This Week let the Gardener take the Advantage of a showery Day, if any happen, for the laying some Branches of those Shrubs and Trees, which will not readily take Root, except by the Shoots of the same Year's Growth. This is the Case with some of the Evergreens, and with the Generality of the woody climbing Plants.

Let the Mould be very well broke; the Branch brought down without too much Violence, and secur'd by two or three strong Pegs. Let the Top be left out of the Ground only four Inches, and let some light Incisions be made near the Joints in the Part that is cover'd.

After the Mould is laid on, give a gentle Watering, and scatter a little Pease-straw over, to detain the Moisture. Let the Mould be from Time to Time examin'd and refresh'd with Water as it grows dry; and in this Manner there will not one Layer in a thousand fail.

Let the Plantations somewhat advanc'd in Growth, be from Time to Time weeded; and, in dry Weather, water'd.

Let the Stakes, which have been plac'd to secure those Trees which have been newly planted, be examined, to try whether they remain firm; and if not, let the Bandages be unty'd, and the Stake driven farther into the Earth with a Mallet; and the Tree then ty'd up to it again.

This is a needful Caution; for the hot Weather that is coming, is very improper for any rocking or swaying of new-planted Trees. The Mould having less Moisture than at other Times, to detain it about the Roots, and hold them together, will separate from them with the Motion; and the dry Air let in at the Opening, which the Stem never fails to make upon rocking about will utterly destroy them. No Season is secure from rough Winds; and this is the Time when their Effect can least of all be borne.

If any of the new planted Trees, tho' firmly secur'd, and at Times water'd, shew Signs of Decay, break the Earth lightly all about them with a Spade; and after giving a gentle Watering, lay all round some Turf from a Common, cut tolerably thick, with the grassy Side downwards. Let there be from Time to Time Waterings given, without removing the Turf; and the Mellowness of the Ground, and the good Temperature it gets this Way, will promote the shooting of new Fibres.



S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

C H A P. I.

Fruits now in Season.

THERE will be a new Supply of Fruits from the Forcing Frame by this Time; and something will begin to add itself from Nature:

better Plums will be obtain'd from the artificial Means than before, and there will be some Nutmeg Peaches. This, as the other forc'd Fruits, will

May. will be inferior by many Degrees to what the natural Trees yield afterwards; but the Gardener has Credit not only from the Excellence of his Products, but from their early Season.

The Strawberries from the Hot-Bed will be now put out of Countenance by those from the natural Ground. These, when they lie in a favourable Situation, and have a rich, and at the same Time warm Soil, will begin at this Time to present themselves for the Table, and every Day

will give a new Succession.

Some Cherries of the earliest Kinds will also be in Perfection from the natural Trees; and these with the few Remains a careful Management has saved thro' Winter, from the Stores of Autumn, will furnish a Dessert in tolerable Elegance. There will also be for the Service of the Confectioner, Apricots, Gooseberries and Currants for Tarts.

May.

C H A P. II.

Care and Management of the Ground.

THE Wall-Fruit which are by this Time coming forward very finely, will require the Gardener's frequent Regard: they are exposed to many Devourers; and they are often produced so thick upon the Trees, that the first thinning of them ought to be begun at this Time.

We shall direct in the End that they be thin'd beyond the common Custom; for the Love of a great Shew of Fruit, in general prevails over the better Thought of its Excellence; and prevents it.

The Question is easily resolved, Whether one Hundred of excellent Fruit is not preferable to two Hundred of indifferent: certainly every Master of a Garden will say it is. This directs the clearing away more than is usually done, and let not the Gardener now be afraid of making a free Beginning. The first Growth is a very great Article, and the Fruit that is crowded can take this but poorly.

There will be no Difficulty in discovering now which are the most promising, which the least so; and the taking off a Part of the worst will give more Nourishment, at a very proper Time, to those which promise better.

Let this thinning, however, be done with Caution: for there are many Accidents to which the Remainder are yet liable; and common Prudence will keep up a Supply against them.

Snails are the great Devourers of Fruit at this Time; and they must be watch'd daily at the Times of their coming out of their Holes, and destroy'd. At early Morning, and very late in the Evening they always will be found: and at any Time of the Day when there are Showers, and the Air is not too chill.

At the same Time that the good Fruit are freed from the Crowd of others, let the Ground about the Trees have such a Dressing as will make them a fresh Supply of Nourishment.

The least that should be done is digging up the Borders with the three-prong'd Fork to destroy Weeds; and where the Condition of the Tree shews more than this is requir'd, it will be adviseable to sprinkle on a Mixture of Pond Mud, Soot and Pigeons Dung.

This, with Waterings so often repeated as to keep the Mould always damp, and so discreetly

manag'd as never to make it very wet, will be the sure Means of giving Vigour to the Trees at a Time when it is of such important Service; and will make them yield a much superior Produce to what they have done of many Years if under the common Management.

While this is doing, let the Gardener observe the Shoots made by the Trees, for they will be the more vigorous and luxuriant by such Management; and if not regulated, will soon grow into Confusion. All fore-right Shoots must be displaced; and great Care taken to train properly such as rise in a better Direction; and in Places where they are wanted, they should at this early Time be brought to the Wall, and secured by a loose nailing; that they may be early accustom'd to the proper Form, and their Juices accustom'd to run in a fit Direction.

The Fruit will fare vastly the better for this Management of the Branches; for in the Luxuriance of Growth, which will be given by this Cultivation of the Trees, the young Shoots will not only be more numerous, but larger and fuller of Leaves, and the Fruit would be injur'd by too much Shade, unless thus remedy'd.

We have observed before, that the ripening of Fruit depends upon the Influence of the Sun, and the Flavour of it to the free Passage of the Air: 'tis for want of this forced Fruits are poor; and whatever in any Degree prevents the Access of either, so far hurts the Produce: Leaves are necessary to keep off the too free Visitation of the Sun Beams, which would else exhaust the Fruit, and make it wither, when it should swell for ripening; but numerous Boughs are too full a Shade, and the Extream on this Side is as bad as the other.

The Gardener ought to make himself perfectly acquainted with the Reasons of all his directed Practice, for there will be little good in his following Rules mechanically: when he understands the Purpose and Reasons of what we propose, he will see not only the Convenience and Advantage, but the Necessity of the Compliance: and will know how to perform the Work regularly, and in due Proportion.

The Care of the young Shoots which are preserved is far from an Imposition of needless Trouble

May. ble upon him; for every Minutes Work he bestows at this Time, whether in regulating these, or reducing others, will save that of many in the succeeding Seasons.

The Perfection of Wall-Fruit is one very con-

May. siderable Article of his Praise, and he will thus as far as possible ensure it: he will remove every Annoyance; and promote every Thing that can be serviceable to its ripening.



SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

THE Spring Crops are in a great Measure secured, but our Gardener is to look forward to every Period of Time; and to prepare for new Produce, or a Continuation of the old in its Excellence at all Seasons.

The three great Articles, Beans, Pease, and French Beans may yet be planted; and it will be always adviseable to put some of each Kind now into the Ground. They will require more Waterings than those planted earlier; but with this Care, careful Weedings, and often breaking the Mould between them, they will come in for Use at a very agreeable Time, and will be good in their Kinds.

The Gardener will remember on this Occasion what we have told him of digging between growing Plants; that it not only supplies Nourishment in a very happy Manner, but makes the Crop better than any Way else able to bear dry Seasons. Such are to be now expected, and there is all the Reason imaginable to prefer this to any other Method in the present late Plantation.

Weeding and Watering are essential now, and must be continued from time to time with Care over the whole Ground. The young Crops will require most of the former Attention, and the older of the latter; but neither must be neglected in regard of one or of the other.

If Weeds be suffered to grow up among the young Plants, they will starve and destroy them. They will always out-grow the Plantation, because they are the natural Produce of the Ground. In the larger and more establish'd Crops they will do less Harm, but still a great deal: if they cannot destroy they will impoverish them; and dry Weather joining its Force, the Crop will come to little. The Blossoms which by this Time are ready to appear, will fall off without Fruit.

If the Ground have been manag'd as we directed, the Crop of Weeds, tho' plentiful, will be but young: they will be best pulled up by Hand, and this at the same Time loosens the Mould about the Roots of the Crop, so that a Watering coming upon that, the whole Business

is done at once. The Plants will be set on growing with such Force, that they will for the future starve those Weeds as the Chance of Winds shall sow among them.

Once every Week now, and for some succeeding Time, let the Gardener sow young Sallad Herbs. The Produce will be very agreeable by way of Variety, even when the best of the larger Kinds are come in; and the Repetition of these frequent Sowings will keep them always in good order: for as they rise quick at these Seasons, they also quickly run up too rank for Use.

It will be time now to plant out the Cabbage and Savoys for Winter Service; and this may with due Care be done upon Parts of the Ground cleared from other Crops.

The Radishes of several early Sowings will be now past Service. Let them be pulled up: let the careful Gardener scatter over the Ground an Inch depth of a Mixture of old Dung from a Melon Bed, and Pond Mud, with a little Soot.

This being laid all of a Thickness must be dug in, and the Mould thrown up for a Week in Ridges. Then let it be levelled, and the Cabbage and Savoy Plants set in Rows at such Distance, that a Spade can be brought in between them in the Summer Months. All Weeds must be kept out, and from time to time the Mould must be drawn up about their Stems in good Weather. This will strengthen them greatly, but Care must be taken in the doing it not to bury the Heart, or let any Mould get in among the Leaves.

The Cucumber and Melon Plants under Frames must be now carefully attended. They are apt to hang their Leaves, and grow faint: this will happen either from the too great Power of the Sun, or the want of a sufficient Depth of Mould.

In the first of these Cases the Frames must be cover'd with Mats in the Heat of the Day instead of Glasses, and in the other an Inch depth of fresh Mould must be spread over the whole Bed.

E D E N :

A

COMPLEAT BODY OF GARDENING.

N U M B E R XXXVI.

For the Latter End of *MAY*.

S E C T I O N I.

FLORA, or the P L E A S U R E - G A R D E N.

C H A P. I.

Curious Plants and Flowers now in their Perfection.

I. The C L U S T E R T U L I P.

May.
Pl. 36.
Fig. 1.

WE have given, in a preceding Number, a general Account of the Tulip Kind, and many elegant Varieties rising from Culture: but their Store is not exhausted; nor shall we want of this the *Fritillary*, or other Kinds, some elegant Flowers, that, blowing later than the usual Time, mix almost Spring with Summer, and shew their painted Heads among those of altogether different Nature.

The present Tulip is an Instance: singular in a very striking Quality, the Number of Flowers on the same Stalk, and from its later than usual Time of Blowing distinguish'd among the common Writers by a peculiar Name.

Two original Kinds, we have told the Student, furnish all the Variety of our Florist's Tulips, the one distinguish'd by a drooping, the other by an erect Flower. This is of the Progeny of the latter Kind, and has ow'd to mere Luxuriance its first numerous Flowers, which it preserves always when propagated by Off-sets; but does not certainly afford from Sowing.

This is the great Distinction between Species and Varieties; and this shews the present Plant, with all its Singularity, to come only under the latter Assortment.

Those who wrote early on Flowers, were
Numb. XXXVI.

acquainted with this; and they have nam'd it, from the Time of its Blowing, the late Tulip, *Tulipa serotina*; and from this Division of the Stalk for the Support of numerous Flowers, *Tulipa ramosa*, and *Tulipa polyclonos*; Terms expressing in the two Languages, the branched Tulip.

CLUSIUS, who describes this Kind in the common Condition of bearing a single Flower, understands it as distinct in Species; and naming the cluster'd Number, considers that as a Variety. The Student in LINNÆUS's Method, is to consider it as one of the *Gesnerian* Tulips, distinguish'd by that Author, under the Name *Tulipa flore erecto foliis ovato lanceolatis*.

The Root is very large and oblong, covered with a deep brown Skin, and hung with many Fibres.

The Leaves are numerous, broad, firm, greyish, wav'd at the Edges, and pointed at the End. The larger lie on the Ground, but there are several of the same Form upon the Stalk.

This is two Foot and a half high, round, firm, pale, toward the Top divided into several Branches, and covered with a greyish Hoaryness.

The Leaves are plac'd alternate on the Stem, and at the Top of every Branch stands one vast
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E D E N:

A

COMPLEAT BODY of GARDENING.

NUMBER XXXVI.

For the Latter End of *MAY*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Curious Plants and Flowers now in their Perfection.

I. The CLUSTER TULIP.

May.
Pl. 36.
Fig. 1.

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Numb. XXXVI.

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CLUSIUS, who describes this Kind in the common Condition of bearing a single Flower, understands it as distinct in Species; and naming the cluster'd Number, considers that as a Variety. The Student in LINNÆUS's Method, is to consider it as one of the *Gesnerian* Tulips, distinguish'd by that Author, under the Name *Tulipa flore erecto foliis ovato lanceolatis*.

The Root is very large and oblong, covered with a deep brown Skin, and hung with many Fibres.

The Leaves are numerous, broad, firm, greyish, wav'd at the Edges, and pointed at the End. The larger lie on the Ground, but there are several of the same Form upon the Stalk.

This is two Foot and a half high, round, firm, pale, toward the Top divided into several Branches, and covered with a greyish Hoaryness.

The Leaves are plac'd alternate on the Stem, and at the Top of every Branch stands one vast
5 P Flower:

May.

May. Flower: the Form is that of the common Tulip: the Colour a dusky red, sometimes a deep yellow; with a violet, black, or dusky Base, naturally terminated on each Petal by a white Line.

The internal Parts are the same as in the other Tulips; and they refer it plainly to the *Hexandria Monogynia*, the Sixth Class in the LINNÆAN Method, and its first Section.

Culture of this TULIP.

It is, in the State wherein we describe it, the Creature of the Gardener's Industry, but in its natural Condition, it abounds wild in the damp Meadows of the East, whence we learn, what general Cautions should be held in its Culture.

It is near two hundred Years since the *Gesnerian* or Oriental Tulip was first brought into the *European* Gardens, where this Variety of it was soon produc'd; and where it now occasionally makes its Appearance in the Beds of those whose Patience raises their Flowers from Seed.

Whether branched or simple, its own Seeds rarely produce any Varieties, except in regard of that Particular: the most I have seen else, is, that the Seeds of the yellow will produce the red late Tulip, and those of the red the yellow; as this CLUSIUS, diligent in Experiments, and faithful in his Relations of them, found long before,

with the same Limitations.

'Tis strange, but it appears also certain, that the Antients were unacquainted with this singular and elegant Flower. That the *Greeks*, studious of Plants, and Admirers, in a high Degree, of their Beauty as well as Virtues, should not know the Tulip (a Native of their own Part of the World, and so distinguish'd by its Form and Colour) is very singular; but there is not in any of their Writers an Account of it, nor a Name for it in their Language.

The Word Tulip is of *Turkish* Origin, and late known; we receiv'd the elegant Kinds from them in 1559; and tho' the little yellow Species with the drooping Head, is native of *Europe*, it was long overlook'd.

They guess idly, who suppose the Tulip the Plant celebrated to such Extravagance by THEOPHRASTUS, for its invigorating Qualities, that, PLINY (who did not use to stick at little Miracles) staggers at the Repetition, and records for his Authority, the elsewhere grave and accurate Manner of his Original Author.

THEOPHRASTUS gives no Description: an *Indian*, he says, possess'd that Plant, and taught them its Effects: it was the *Ginseng* probably of modern Times, Native of a Part of the *Indies* with which they had Intercourse, and now celebrated for like, tho' not equal Virtues.

2. ZUMBUL HYACINTH.

Pl. 36.
Fig. 2.

This is a very elegant and valuable Plant: long known in our Gardens, and worthy to be continued there with all kind of Attention. The Authors in general who have written of Flowers have mention'd it, and all under the same Name, *Hyacinth*, but with various Additions from its Place of Growth or Accidental Marks, *Oriental Hyacinth*, and *Hyacinth of Constantinople*, *Indian Hyacinth*, and *Zumbul Indi*: others have call'd it *spotted Hyacinth*: the Stalk and Leaves in the lower Part being frequently stain'd and spotted in an elegant tho' irregular Manner.

LINNÆUS, who adopts Names from more lasting Characters, calls it *Hyacinthus corollis infundibuliformibus semisexifidis basi ventricosis*: Funnel-flower'd *Hyacinth*, with the Flowers swollen at the Base, and lightly cut at the Edge into six Segments.

Under this Name he comprehends all the Varieties of Oriental Hyacinths, (Species as others call them) and does not allow this, which the Gardeners hold so extremely distinct from the rest, to be any thing more.

The Root is very large, round and white, full of Juice, and hung with many thick Fibres.

The Leaves are numerous, broad, and very conspicuous; they resemble those of the Lilly: they are of a fresh green, wav'd at the Edges, and often curl'd or twisted.

The Stalk is round, firm, fourteen Inches high; and upright, except that it bends toward the Top

with the Weight of its numerous large Flowers.

The lower Part of it is variously and elegantly clouded and spotted with Purple; and usually the Bottoms of the Leaves are in the same Manner painted like the Stalk of the great Dragons.

The Flowers are very large, and naturally of a Celestial Blue: they hang in great Clusters from the Top down one third of the Length of the Stalk: sometimes they throw themselves all on one Side, in some Plants every Way.

Each has its short Footstalk. In Form they resemble the other Hyacinths, but they are the largest of their Kind; and by Culture their Colour will be chang'd in many Degrees; it will grow deeper or paler: there will be a Mixture of Red in various Proportions with the Blue, which will make it Purple; and it will sometimes be fleshy or White. These are all fine Colours, and the Flower is very elegant in all of them, but in none so truly fine as in its pure celestial Blue, its genuine and natural Colour.

The Flower is form'd of one Petal, and grows naked to its Footstalk: it is rounded at the Base, cylindric and tubular in the Body, and at the Rim it turns up in six large and elegant Segments.

Within stand six short Filaments, whose Buttons converge: and there is in the Centre of these a short Style with an obtuse Head. The six Filaments shew it one of the *Hexandria* of LINNÆUS, and its single Style one of the *Monogynia*, the sixth Class and its first Section.

Cul-

May.

Culture of this HYACINTH.

It is a Native of the *East*, and is there found bordering the Woods and Thickets, where the Mould is light and fine; as the common Blue Bell ours.

In the *East-Indies* it is usually found in rich Soils, and where there is some Moisture: in *Africa*, where it is scarce less common, it will grow in burning Sand. This makes a Difference very considerable and conspicuous in the Plant. The *Asiatic* is large, and has the Flowers of the true Celestial Blue: the *African* is smaller, the Stalks are more spotted, and the Flowers usually have more or less of the Red with their natural Blue.

A Plant subject to so much Variation in its natural State, may well admit great Changes in our Gardens: these not only shew themselves in the Flowers, which will be single and double, as well as red, white, and blue, but in the Leaves and Season of Flowering: for some are earlier, some much later.

All this depends upon the same original Cause, the Difference between the *Asiatic* and *African* Plants; for the *African* as they are smaller and narrower leav'd, are also earlier in Flowering. We have obtain'd Seeds from both these Places, and the Plants rais'd from them have in some Degree shar'd the natural Qualities of their Original. From these we have propagated an innumerable Store, and these partake variously of these several Properties.

The Gardener is to learn from this History of the Plant, two Things; that it is an excellent Subject for his Industry, because naturally susceptible of so much Change; and that he has his Choice to raise it on a dryer and more poor, or on a somewhat moister and more rich Soil.

The Compost I have found to succeed with it best, and from which not only the finest Flowers, but the greatest Variety of them have been produced under my own Care, is of a middle Nature between the two: it is compos'd thus:

Mix equal Parts of fresh Pasture-Earth and rich Pond-Mud. To every Bushel of this add half a Peck of Sand, and the same Quantity of Earth from under a Wood-Pile. Throw the Whole up in a Heap, expos'd to the Weather, and let it lie from *October* to the End of *July* following.

Then fill some Seed-Boxes with it, and sow on it moderately thick the Seeds of the great blue-flower'd Kind, gather'd from robust Plants, that have the Stalks well spotted. Sift over them a Finger-Breadth of Mould, and place them where they may have the Morning Sun all Autumn.

In Winter let them have the full Noon-Sun; and in Spring let them be remov'd into their first Place. In very sharp Weather let the Surface be cover'd with a little Pea-straw: at all Seasons let it be kept clear from Weeds; and from Time to Time let its Quality be examined, that it may not grow too dry.

With this Management the young Plants will appear in *February*, and their green Leaves will stand out a great Part of Summer.

When they are faded, half an Inch of fresh Earth must be sifted over the Surface, and it must be kept clear from Weeds as at first.

A large Parcel of Compost should be now made as the first, and the *August* following a Bed should be prepar'd with it, and the Roots separated from the Mould in the Boxes, and planted in it.

They will flower the fourth or fifth Year from Sowing; and the Gardener will find his Trouble and his Patience very well rewarded, by their Number, Variety, and Excellence.

This is the Way to raise them in Plenty, Variety and Beauty. The Method of preserving and managing the Roots, when full grown, we have declar'd already. The common Practice is to propagate and encrease the Flowers from Off-sets produc'd by the old Roots: this is a certain Way of preserving the same Flower; but the true Spirit of Gardening is not content with that: neither will these Off-sets for ever preserve the Lustre of the original Plant.

3. GOLDEN AMARYLLIS.

Pl. 36. Our Student knows that *Amaryllis* is a Name of modern Origin, as apply'd to a Genus of Plants. We have made him acquainted with several of the Species, all elegant; and for the most Part describ'd under very various Names, by those who wrote before the Time of the modern Improvements of the Science.

Fig. 3. LINNÆUS first brought the Plants of this Genus together: he found them ally'd by Nature, tho' disjoin'd by unfinish'd Art; and having separated them from all others, he distinguish'd them by this perhaps fantastic but certainly appropriated Name. Most of the others had been call'd *Narcissus*; and this by some has been distinguish'd by the same Generical Name; by others it has been rank'd among the *Colchicums*.

C. BAUHINE calls it yellow *Colchicum*: CLUSIUS has been follow'd by most in naming it a *Narcissus*, adding the Term *Autumnalis*, to denote the Time of its Flowering; tho' this has no Certainty, for the Flower is now perfect in some Gardens, and is often much earlier as well as much later.

LINNÆUS, who forms his Names from real Characters, calls it *Amaryllis spatba uniflora corolla equali staminibus declinatis*: Single-flower'd *Amaryllis*, with the Flower upright, and the Threads stooping.

The Root is large, roundish, black on the Outside, white within, juicy, and hung with many Fibres.

The Leaves are long and moderately broad, wav'd

May. wav'd at the Edges, pointed at the End, and of a deep blackish green.

The Stalk is firm, round, and of a pale green. It rises in the Midst of the Leaves, and is but an Inch or two in Height.

On its Top stands a single Flower, large, of a golden Yellow, and very beautiful. It bursts from an oblong Scabbard, and is upright, hollow, and regularly shap'd.

The Petals are six: broadest in the Middle, sharp-pointed, and small at the Base. Within stand six Filaments, crown'd with oblong Buttons, and in the Midst of them a Style, with a three-parted Head.

The Class and Place of the Plant in the LINNÆAN System are learn'd from this: it is, as the former, one of the Sixth Class, the *Hexandria*, and of its first Section.

The Seed-vessel which follows the Flower, is of an oval Form, and has three Valves and three Cells, with numerous Seeds.

Culture of this AMARYLLIS.

Beside the Beauty and Singularity of this Flower, (for it has both in no mean Degree) the Ease of its Culture is no small Recommendation: it is encreas'd easily by Off-sets, tho' rais'd more successfully by Seeds, and in either Way requires little Attention.

It is a Native of many Parts of *Europe*, especially of *Spain*: it rises there in damp Ground very abundantly, and paints the Meadows as our Crowfoot.

The Soil to be prepar'd for it should resemble this which it has naturally; and the Part of the World wherein it is wild, will inform the Gardener that it requires no Stove or Greenhouse to bring it to Perfection.

Let him mix up a Compost of the following Ingredients:

May. A Barrow of Earth from under the Turf in a rich Meadow, a Bushel of Pond-Mud, and a Peck of old Cow-dung. Throw these up in a Heap all Winter, and in Spring let them have an Addition of some Soot. Let them be turn'd up again to the Weather, and remain in that Manner till *August*.

This is a Compost well suited not only to this, but to many other of the Plants brought from the Meadows into our Gardens.

In the latter End of *August* let the Mould be dug out of a Border in a Part of the Seminary, open to the South East, and let this Compost be thrown in. On this, when the Surface is levell'd, let some Seeds of the Plant, sav'd with Care from the earliest Flowers, and such as have blown strongest, be sow'd moderately thick. Sift over them a Quarter of an Inch of the same Compost, and throw some Hawthorn Bushes upon the Bed.

All the Care it will require farther, is Weeding at Times, and Watering when the Mould is too dry. The young Plants must be thin'd where they stand close, and at two Years Growth they may be planted out into a Bed at four Inches Distance.

The Gardener, when they come to Flower, will find among them a great deal of Variety, deeper and paler Flowers, larger and smaller Plants, and broader and narrower Leaves. These have been consider'd by some as the Marks of distinct Species; but he will know in what Manner to consider them, when himself has rais'd them all from the same Seed.

After this, the better Kinds are to be separated, and propagated by Off-sets. But we advise the Gardener on this, as all the preceding Occasions, now and then to repeat the Article of Sowing. The Trouble is really very trifling, and the Reward is a certain Improvement.

4. The PERSIAN LILLY.

Pl. 36. We call here by the Gardener's Name, a Plant Fig. 4. to which a very different Generical Title belongs. He will understand by this what Flower we mean, and we are then to tell him it is properly a *Fritillary*: the Title must not surprise him, the *Crown Imperial* belongs to the same Class. He may be indulg'd in calling both these by those long accustomed Names, but 'tis fit he know that their Flowers shew them truly of the *Fritillary* Kind.

This is a very singular and elegant Species, conspicuous for the Number and Disposition of the Flowers, more than for their single Elegance; but, on the whole, extremely worth the Care bestow'd upon it in our Gardens.

We obtain'd it from *Susa*, about a hundred and eighty Years since; and those who first receiv'd it call'd it thence the *Susian*, or, in a more extensive Phrase, the *Persian Lilly*.

We have seen the Word Lilly apply'd wildly, by those unartful Authors on many Instances, and this is not the least; for the Plant has not the slightest Resemblance to that Genus.

LINNÆUS plac'd it in its proper Rank. He determin'd the Genus *Fritillary* by the invariable and distinctive Character of the Flower, and he added this to the rest of that Name, giving, as the Characters of the Species, *racemo nudiusculo foliis obliquis*: Oblique-leav'd *Fritillary*, with the Flowers in an almost naked Cluster.

The Root is very large, round, and compos'd of great Scales, cover'd with a thin Membrane: in Colour of a yellowish White, and of a disagreeable Taste.

The Stalk is round, firm, upright, and two Foot high, of a pale green; and from the Bottom

May. tom to half its Height, or more, thick set with Leaves.

These are long, narrow, sharp-pointed, wav'd, and of a pale but not unpleasant green.

The Flowers are numerous, and they crown the Plant in a long Spike of a pyramidal Form. All have Footstalks; but those of the lower Flowers are longest.

The Flowers themselves are small, they hang drooping from their Footstalks, and their Colour is a deep Purple; paler on the Inside than without, and with a little Greenness about the Bases of the Petals.

Each Flower is compos'd of six, and is of a Bell-like Form: it rises from the Footstalk naked, and the Petals are oblong, obtuse, and parallel in Disposition. In the Base of each Petal there is a Hollow, in which is lodg'd a Drop of Honey-Juice. These Characters refer the Plant to the *Fritillary* Kind; and the Class is obviously written in the internal Parts: these are six Filaments gather'd close about a single Style. From these it is to be adjudg'd to the *Hexandria Monogynia*, the sixth Class of LINNÆUS and its first Section.

Culture of this FRITILLARY.

In *Persia*, where the Plant is native, it thrives best in a rich Soil where there is some Moisture. This must be our Rule for adapting a proper Compost; and in the Choice of a Place for it, so much Regard should be had to its native Warmth of Climate, that it be not too much expos'd; nor must it be left, during Winter,

quite unshelter'd. Let the Compost be four Parts rich Meadow-Earth, and one Part rotted Cow-dung. Let this lie from *November* to *August* expos'd to the Air, and often turn'd; and then let it be put in the Place of some Mould dug out of the Seminary, in a Part of the Ground not too much expos'd to the North, nor open to the Noon-day Sun.

Let Seeds be sav'd from a strong and well growing Plant, and sown upon this Compost. Let a third of an Inch of the same Mould be sifted over them, and let the Bed be defended by a few Hawthorn Bushes; and kept weeded.

The Plants will grow gradually to their Perfection; and when they are fit to be brought into the Garden, a Bed of the same Compost must be made for them, and they must be planted at a Foot Distance. Here they will flower in the highest Perfection; the best of them should be mark'd, and afterwards propagated farther by Off-sets.

Few are at the Trouble to raise this Plant from Seed; but none will have it in the greatest Degree of Perfection by any other Method.

There is not the Temptation of new Flowers to lead Men to this Practice, for the Plant is the same in general, however propagated; but there is a vast Difference in the Strength of the Colour; and when this is in its Perfection, it does not last more than a certain Number of Years in the Off-sets: they by Degrees wear out in their Lustre of Flowering; and this careful Method of raising by Seeds is the only Way of keeping the Plant for a Continuance in the full Glory.

5. PROLIFEROUS SCARLET ANEMONE.

Pl. 36.
Fig. 5.

We have occasionally treated of Anemonies before, but have refer'd the full Consideration of their Culture and Management to this Place, where treating of one of the most conspicuous and singular Kinds, the Art of raising that may comprehend the whole Doctrine of the others.

The Reader has been told before, that all that Blaze of Beauty and Variety we see in the Anemone Kind, is the Produce of a few original Species. All that Nature has done toward it, is compris'd in narrow Limits; but the Produce of Art from a good Management of these, is innumerable; and the new Productions are endless.

From the broad-leav'd and narrow-leav'd Anemone proceed all our elegant Flowers. This of which we treat here is of the latter Kind, and owes its redundant Beauty to repeated Operations of the Gardener.

The Seeds of a single Anemone of this Kind produce a semi-double: Seeds from that Flower afford a perfect double Anemone; and good Management and good Fortune combining, produce from the Seeds of the last, the proliforous Flower here mention'd; double in the most per-
N^o 36.

fect Manner, and sending up from its Centre another Flower, no way inferior to itself in Bigness, Colouring, or Multiplicity of Petals.

This Effect of exuberant Nature we have explain'd on the Occasion of the *Ranunculus* in two Kinds; but in both those the second Flower is smaller than the Original: 'tis peculiar to this Anemone to have it equal.

So conspicuous a Variety could not escape the Notice of those who first treated of Flowers after its Production. They have nam'd it with Wonder, and dwelt on its Description with a kind of Transport.

They have call'd it *Anemone prolifera*; *Anemone flore suave rubente prolifera*; and, in the English, *Childing Anemone*, and *Proliferous Anemone*.

LINNÆUS, refering it to the original Species, allows it, in this peculiar State, no separate Name: the plain Kind, to which it owes its Origin, he calls *Anemone foliis radicalibus ternato decompositis, involucre folioso*: Anemone, with the Leaves from the Root subdivided in Three's, and a Leafy Involucrum.

The Root is oblong, thick, tuberous, and irregularly
5 Q

May. regularly divided into Heads; of a brown Colour, hung with many Fibres, and of an acrid and disagreeable Taste.

The Leaves are supported on long Footstalks, and are large, of a deep green, divided and subdivided, but all the Way in Three's; and the Divisions are irregular, oblong, and pointed.

The Stalk is a Foot high, reddish toward the Ground, not perfectly upright, round, and a little hairy.

About its Middle stands a Leafy Substance, broad, short, and divided in Three's, in the Manner of the Leaves; and at its Summit stands a large and elegant Flower. This, from the first Opening of the Petals, shews in its Centre the Rudiment of another, plac'd on its proper Stalk, which rises in the Midst of the first.

As the first Flower opens, the Footstalk of the other rises, and that on its Summit begins to open; and by that Time the first is perfectly expanded, this other is rais'd some Inches above it, spreads its Petals with the same Freedom, and the Flower in a Day or two more becomes perfect.

In this State the Gardener, with good Care, may keep it many Days; but, without such Management, the lower Flower begins to fade as soon as the upper one has its full Perfection.

The Structure of each is perfectly alike, and they have the full Beauty of the Anemone Kind, when carry'd to the utmost Perfection. They are of the Bigness of a small Rose, and full of doubled Petals: these are oblong, narrow, pointed at the End, and plac'd in three or four distinct Series.

Their Colour is naturally a strong and elegant Scarlet; but to this, the same Culture that gives the Exuberance of the proliferous Flower, sometimes also adds Variegation. The Petals will be stain'd with a paler Red, with White, and with Green. In either Case, it is a Plant of consummate Beauty.

The Characters of Classes are very obscurely visible in these double Flowers: to know to what Part of a System such Plants belong, we have told the Student he is to trace the luxuriant Variety back to its simple State, and that he may find no Difficulty in that Matter, we always name what that original Plant is.

He sees it is the common single fine-leav'd Anemone, and in this the Parts of Impregnation are sufficiently conspicuous. The Flower rises naked from the Stalk, and has, in this plain State, six Petals. They are dispos'd in two Series, and the Centre is occupy'd by a Head, compos'd of the Rudiments of numerous Seeds, and surrounded with a vast Tuft of Threads: these are short, and crown'd with double Buttons.

The Student tracing these to their Base, finds them inserted not on the Petals but the Receptacle; this, with their Number, shews the Plant one of the *Polyandria*; and each Rudiment of the cluster'd Head, having its pointed Style crown'd with an obtuse Top, shews it one of the *Polygynia*.

Culture of the ANEMONE.

We have said that under this Head we shall deliver at large the Culture and Management of the fine Anemonies in general. The Season is now very proper; for the Seeds must at this Time be sav'd, and the Compost prepar'd for receiving them.

With Regard to the first Article, the Gardener must distinguish carefully the three Kinds of Anemonies, as they are characteris'd by the Condition of the Flower, the Single, the Semi-double, and the Double. With this first Distinction in his Memory, let him go over the Beds of Anemonies in full Flower, and select Plants for Seed.

The Seeds of the single are excellent for the Production of the common semi-double, and some double Flowers. These have the full Strength of Nature, but they are not to be selected for the present Purpose, because more Time and Re-sowing would be requir'd. The Seeds of the double Flowers are not fit: many of them ripen none, and in those which do, they are weak, and often imperfect.

This throws the Choice upon the semi-double Flowers, that is, on such as have some Series of small Petals within the larger, yet have not the whole Body fill'd with them, but have plain, conspicuous, and vigorous Heads of Seeds in their Centre, surrounded by Threads, with fair and perfect Buttons.

From these Flowers perfect Seeds may be obtain'd, and they have not the first Change to pass, as they must, if the Flower in which they were ripen'd had been absolutely single.

Among the semi-double Flowers which have this Character, let him select such as have upright, tall, and strong Stalks, and have the Flower large and well colour'd.

These let him mark with Sticks; tying up the Stem, to prevent the Wind from having too much Power upon it, and then ripen the Seed with all possible Attention.

To this Purpose, let him take up the Roots that are nearest these; strew a small Parcel of some rich light Compost about the Plants, and every Evening give them a gentle Watering.

As soon as they are mark'd, let a Compost be mix'd up for the Seed of the following Ingredients:

A Barrow of rich Mould from under the Turf in a dry hilly Pasture, a Bushel of River-Mud, three Pecks of rotted Cow-dung, and of hard large Sand, and Earth from under a Wood Pile, each a Peck and half.

Throw these in a Heap, and once in ten Days turn them, working them well together, to break the Clods, mix the Ingredients, and prevent the Growth of Weeds.

This will be preparing while the Seeds are ripening.

When they have acquir'd their Bigness, leave off watering the Plants; and as soon as they begin to be loose upon the Head, cut off the Heads

with

May. with a Piece of the Stalk, and lay them on a paper'd Shelf to harden.

After a Week or ten Days separate the Seeds from the Head: let them lie a Week more to harden, and then paper them up for Sowing.

In the second Week in *August* chuse a Part of the Seminary that is open to the South-East, and is upon a rising Part of the Ground. Dig out the Mould, fill up the Place with the Compost, and lay the Surface level.

Mix with the Seeds six Times their Quantity of dry Pasture-Mould, and let them be perfectly blended with it, so as not to lie in Clusters together. Then sow them with this Mould carefully upon the Bed, in a still calm Evening. Sift over them a Quarter of an Inch of the same Compost, and lay upon the Bed some Hawthorn-Bushes; not to cover it up close, but to keep off Injuries.

Every Day, an Hour before Noon, draw a Mat over the whole Bed. The Bushes will support this, and give Air underneath. Let it be remov'd at Four in the Afternoon; and when the Weather is cloudy, let it be wholly omitted. The only Purpose of this Shelter, is to prevent the too powerful Effect of the Mid-day Sun at that Season, which would dry up the Compost to absolute Dust, and burn the Seeds.

If no Showers fall, the Bed must once in ten Days be water'd; but in this there will be requir'd great Care. If it be done in a rash Manner, half the Seeds will be wash'd out of the Ground. A small Pot with a fine Nose must be us'd, and this so manag'd, that the Water may fall softly upon the Surface, like a gentle Shower, refreshing and moistening the Earth without disturbing it.

The Bushes are all this Time to remain upon the Ground, except it should be necessary to remove them, to pick out any chance Weeds.

The first Week in *October* let them be taken away entirely, and let a Couple of Reed-Hedges be hung on Hinges, at the North and East Ends of the Bed. These must be drawn in to defend the Ground in severe Weather, but at other Times left open.

In the Middle of *October* the young Plants will appear. The Bed must then be carefully weeded; and if they grow too close in any Part, they must be thin'd.

Two or three Hoops must now be plac'd over the Bed, and a Canvas or Mat laid in Readiness, to draw over it on Occasion.

With these Defences prepar'd in Time, the Plants will be kept alive thro' the Winter. The Bed must be now continually weeded, that not the least Shoot of any thing be seen upon it but the Plants.

If gentle Showers fall, they must be admitted freely to the Ground: if it be a Season of Drought, their Place must be supply'd by Waterings; but when heavy Rains fall, the Canvas or Mat must be drawn over the Hoops, to shelter the young Plants from them.

This is necessary on two Occasions, for these hasty Showers which fall with Violence, will often wash away the Mould from the tender Roots, to their certain Destruction; and often so much

Wet will settle on the Bed, as lying about the tenderest will rot them; or the first Frosts of Winter following them, will have the more Effect upon the Mould from its Wetness, and will harden it in Clods, with Cracks between, which will admit the cold Air to their Destruction.

This is the Care needful in Regard of Rains. In frosty Weather the Mat or Canvas must be drawn over the Hoops every Evening, and remov'd every Morning; or, when very severe, kept on all Day: and against the cold and nipping Winds of early Spring, the Reed Fence is to be turn'd upon its Hinge, according to the Quarters from whence they blow.

Thus will the Plants be preserv'd in Vigour thro' the Winter. In Spring they must be kept carefully weeded, and as the Summer advances, sometimes gently water'd.

In *June* the Leaves will decay.

Let the Roots then be carefully taken up.

Let the Compost be dug out, and a fresh Quantity prepar'd for the Purpose be put in, and let the Bed be enlarg'd, so that it may hold the Roots at due Distance.

Let the Surface be levell'd, and Lines drawn a-cross and lengthways, at four Inches asunder; and in the Centre of each Square place one Root, with the Bud upwards. Sift over these half an Inch of Mould, and manage them in Respect of Weeding and Watering as at first, placing the Reed Fence to the Southward, to shade the Ground from the full Sun.

The third Week in *October* give the Bed a very careful and perfect Weeding: then sift on half an Inch more of the Compost, and defend it as the former Winter.

Early in Spring the young Plants will appear very vigorous and strong, and a great many of them will flower.

The Gardener is not to judge of their Value from these their early and maiden Flowers: they will often promise a great deal, but the Perfection is in succeeding Seasons.

This Spring let a larger Quantity of Compost be prepar'd, and let the Plants now be well attended.

When the Leaves are decay'd, let them be taken carefully out of the Ground, clean them from the Mould that hangs about them, pick away the decay'd Stalks, and then spread them upon a Mat in an airy Room, where the Sun does not shine in.

When they have lain here long enough to harden, pick off any Mould that might be left about them at first: tye them up in small Bags, not too many together, for Fear of their gathering Damp, and hang them up out of the Way of Accidents, or Vermin.

The last Week in *August* chuse a Place in the Flower-Garden for planting them. Let it be open to the South-East, and defended from the full East and North. Mark out a Space sufficient for the Roots, and dig away the Mould three Quarters of a Spade deep. Bring in the Compost prepar'd for this Purpose of the same Ingredients, and in the same Manner as the first. throw

May. Throw it into the Place, and lay it twelve Inches thick, levelling the Surface.

Thus let it lie ten Days, then break it lightly with a Spade, half Spade Depth, and rake it even. Draw away all Clods and Stones, and on the clean Bed draw Lines lengthway and a-crofs, six Inches distant.

Take the Roots out of their Bags, and place one of them carefully in the Middle of each Square. Sift on more of the Compost, and cover them two Inches and a half. Care must be taken that the Bud of the Root lie uppermost; and the Surface of the Bed must be now finish'd with a fine Rake, laying it a little rounding, to throw off the Water.

If no Showers fall within a Week after the Planting, let the whole be gently and regularly water'd.

Some Hoops must be planted over the Bed; and in the Severity of Winter there must be a Mat or Canvas drawn over these, either at Night only, or, if it be very sharp, all Day, opening them only once in two Days at Noon, to give them some free Air.

In Spring the Bed must be weeded; and when the Flower-Buds appear, great Care must be taken to defend them from sharp Winds, by drawing on the Mats, or by Reed-Hedges planted against the cold Quarter.

In April they will flower.

We do not promise the Gardener of a Certainty that he will have this elegant proliferous Kind from the first Sowing; but whether he have or not, his Labour will be well rewarded: he will have some single Flowers, which must be remov'd; many semi-double, and perfectly double; and whatever were the Colours of the Flowers from which he sav'd the Seeds, he will have among these Plants rais'd from them, Red, Blue, and White; simple, and in all possible Combinations. From the Red and the Blue, will be form'd a vast Variety of Purples; from the Red and White, all the Tinges of Flesh Colour, Crimson, and Scarlet; and there will get in among these some Green, which will have a fine Effect in their Variegations.

If the Proliferous Kind do not appear among those, it may be expected from a second Sowing. At all Adventures this should be done every Year.

The best semi-double Kinds should be mark'd, and the Seeds sav'd with the same Care we before directed, and sow'd in the same Manner.

Thus the Gardener will every Year have a great many new Flowers; and among them, one Time or other, will be found this bold and elegant Kind.

The Roots must every Year be manag'd in the following Manner:

When the Leaves are decay'd, after Flowering, they must be taken up, clean'd as before directed, and parted; that is, divided according to their Growth into two or more Parts: but let the Gardener remember, that if he breaks them into too small Pieces, they will flower weakly. Every Part that has a Bud will grow, but the boldest and largest Pieces are those which flower in Perfection.

This done, let the Roots be ty'd up when they are harden'd, and preserv'd for Planting.

It is a Piece of good Address in the Gardener to mark the Plants as they are in Flower, by Sticks of particular Shape, according to their Colours. Thus he will know what Root produces what Colour; and keeping these separate in the Drying, he will be able to mark upon the Bags their Properties and Colours.

This will serve an excellent Purpose: in the next Autumn Planting he will be able to mix the Blues and Reds, and Violets and Purples, and Peach-blooms and Crimsons, so as to set off each other; and no two of a Colour shall appear together.

This will provide for an elegant Disposition of the Plants: but more is to be considered in this Plantation. The Beauty of the Anemonies is so great, that the Florist wishes it permanent. In this Respect the same Methods we have directed for the preserving Tulips in their Bloom, will be serviceable: for the same Accidents hasten the Decay of all. The better they are defended from Winds, stormy Showers, and full Sun, the longer they will keep in Beauty.

But, beside this, there may be a Succession provided in this Kind, by planting the Roots at different Times. There should be at least three Plantations of the Anemony Roots in so many separate Beds; the first early in September, the second toward the Middle of October, and the last after Christmas.

Only indifferent Roots must be sav'd for this last Plantation; but there will be this Way a long Continuance of the Bloom; and as one Plantation goes off, and the Leaves decay, those Roots must be taken up; not waiting for the others.

6. BROAD-LEAV'D CLUSTER FRITILLARY.

Pl. 36. We brought the Reader in our last Number acquainted with many of this painted Tribe, but Fig. 6. there are yet two or three others late in Flowering, and not for that only, but their Beauty worth his Notice. This cluster'd Kind is one.

T. Number of Flowers and their elegant Dis-

position, never fail to please the most incurious Eye; and tho' the Colouring be less gaudy than in some others, yet it extremely deserves a nearer View, and will not fail to please the more, the more it is examin'd.

The Root is moderately large.

The



May.

The Stalk is firm, round, green, upright, and, according to the Soil, from six to sixteen Inches in Height.

The Leaves are very numerous, they stand opposite at the Bottom; but on the upper Part of the Stalk are alternate. These lower Leaves are also considerably broad, the others are narrow and sharp-pointed, rib'd, of a pale green.

The Flowers hang from the Tops of the Stalks in various Directions, but with a wild and pleasing Irregularity. Together they form a roundish Cluster, and they hang naturally downward, but their Stalks twist, and sometimes turn a little irregularly upwards.

Their Colour is a dingy Purple mix'd with Yellow.

The Flower consists of six Petals, as in the others: a broad Rib of dusky Yellow runs

May: along the Middle of each Petal, and the Sides are Purple. There is little of the Chequering visible in this Part: all that approaches to it, is, that a few Purple Spots are irregularly scattered over the yellow Rib.

Within the Colours are brighter, and plac'd more regularly: the Part nearest the Base is chequer'd, as in the other Kinds: the Ground Colour is Yellow, and the Chequering Purple.

This is a Variety of the *Pyrenean Fritillary*, the *Fritillaria foliis imis oppositis*, of LINNÆUS. No particular Rule is needed for the Culture: it will rise from the Seeds of that Species, manag'd as we directed in the preceding Number; and, when once obtain'd, the Stock must be increas'd by parting the Root: for it does not well ripen the Seed.



C H A P. II.

The Management of the Flower-Garden, for this Week.

WATCH where the Leaves of the bulbous and tuberous-rooted Spring Flowers are decay'd, and take up the Roots.

The early Tulips, the early Crocus's, and some of the first Anemonies, together with the Snowdrops, and others, will be now in a right Condition for it. They must be clean'd from Mould, and spread upon a Table or Mat in a shady Place, to harden: and then put up for the next Plantation.

Look to the Boxes of Seedling Flowers, and remove them, if that have not been done before, into some Place where they will only have the Morning Sun. We have given the Reasons of this Management under the several Kinds.

In general, they are to have as much Sun as can be allow'd them during Winter, to warm the Mould, and cherish their young Roots; and in Summer they must be shelter'd from its full Beams; tho' they are open to those of the Morning: for if they were expos'd at Noon they wou'd be parch'd up. As the Weather grows hot, this Care is to be taken to remove them, so that no particular Day can be fix'd; but usually it is full Time to do it by this Week.

As the Carnations grow toward Flowering, the Earth must be kept moisten'd; and Insects pick'd off, if at any Time found about the Plants.

The Auriculas, as they grow past Flowering,

must be remov'd from the Stands, and plac'd in some Part of the Ground where they can have only the Morning Sun. After this, Care is to be taken that no Mofs or Weeds grow upon the Mould; and thus they are to be left for Summer.

Let the Gardener look over his Borders, and see where any thing can be added for the Autumn Flowering: there are several Plants he may yet bring in. The sweet Scabious, Oxeye, Chrysanthemum, and many others, will be now fit to remove; but let the Gardener take a good Opportunity of doing it: let him chuse the Evening of a showery Day, and shade the Plants afterwards at Noon, till they are well rooted.

This Care being taken of the particular Kinds, let him clean and lay in Order every Part of the Ground. Not only the Flower-Beds must be kept free from Weeds, but none should be suffer'd to remain any where about the Garden. It is the Time when they will be running to Seed; and one Plant now left will be the Parent of a thousand.

Let the Grass-Walks be mow'd frequently, for they soon run up into Wildness, if neglected at this Season; and let the Gravel be kept roll'd, and clean'd, that every thing may be in Order for Service.

May.

May.



S E C T I O N II.

The Management of the SEMINARY, for this Week.

LOOK to the Biennial and Perennial Flower-Roots, rais'd from Seed the last Season; and now, according to our Direction, transplanted into separate Beds. If the Weather be not showery, they will now require frequent Waterings. After they are thus set in for a free Growth, all that will be requir'd is to keep the Ground clear from Weeds between them; and they will strengthen themselves for Flowering.

This Week is the best Time in the whole Year for propagating the Scarlet *Lychnis's* by Cuttings. The double Kind is no Way so well rais'd as this, and the young Flower-stalks are the proper Part to use.

Let a shady Piece of the Ground be chosen; the Mould very well dug up; and these Cuttings planted with Care. Every other Day let them have a gentle Watering, and they will grow very freely.

Many of the *Lychnis's*, and other Perennial Flowering Plants, succeed very well this Way, and not only save a great deal of Trouble, but afford stouter Stalks.

Look with Care over the Trees that were budded the last Season: the great Point is, that the Shoot be not defrauded of Nourishment, nor left in the Way of Mischief from Insects. In the first Article, the Whole depends upon suffering no Shoots from the Stock: these must be rub'd off as soon as they appear, and by that Means the Nourishment will all get to the Bud.

We have observ'd, that wherever there is Weakness in the Tree, Insects are apt to come: in these Cases, the Bud frequently is but moderately supply'd with Nourishment; and, in Consequence, there will be Danger of this Mischief. The first Notice of it will be by the Leaves beginning to curl up. As soon as this is seen, let those which are worst be pick'd off, and the rest must be wash'd every Evening with some Water in which there has been steep'd Wood-Soot and Tobacco-Stalks. I have seen many Buds that were in a very declining Way, perfectly restor'd by this Management.

Next look to the Beds of Seedling Trees and Shrubs: they must be water'd at Times, and carefully shaded from the full Noon-day Sun. The drying Winds will also prove injurious to them, unless they be carefully defended by a Reed-Hedge.

All this Time the Mould should be kept perfectly free from Weeds between them, and now and then broke carefully with a Trowel.

No Part of the Gardener's Ground requires Moisture so much as the Nursery. Let him examine from Time to Time the Condition of the Mould about the new-planted as well as Seedling Trees and Shrubs; and wherever he finds Nature has not given Moisture enough, let him supply it by Labour. Waterings in large Grounds are very fatiguing, but the Choice is to do this properly, or to lose all the Profit of former Care and Pains.



S E C T. III.

P O M O N A, or the FRUIT-GARDEN.

THIS Week let the Gardener repeat his Care of thinning his Fruit upon the Trees. He will by this Time see which of those he left before likely to ripen best, and he should now displace the others.

In this Thinning there must be no where two left together. One good one is preferable to two are indifferent; and it is certain those which grow close hurt one another.

No Matter whether the Quantity upon the Tree be small or large: if there be ever so few, let not those which stand thus, be preserv'd for that Reason. The right Practice is to be content with the few that will ripen well, and wait a better

Produce next Season. This is the Rule in unfavourable Seasons; but when the Quantity is large, this Thinning is so much the more necessary. Not only the present Crop is to be considered, but the good Condition of the Tree for succeeding Years. Often a favourable Spring will set more Fruit than it is possible for the Root to feed. These Things are naturally liable to Accidents; and more Bloom is allow'd by Nature than is expected for that Reason.

When no Accident happens to prevent a considerable Part from Setting, the Hand of the Gardener must supply the Place, by taking off the superabundant Number. If this be omitted, the
Fruit

May. Fruit will be poor that Year, and thin the next; because the Tree will have been too much exhausted to furnish then even a healthy Bloom.

Some who think themselves careful Observers, remark that the bearing of Fruit-Trees is in alternate Years; that there is one full Year, and one scanty. The Reason is, that when the Trees are crowded with Fruit they will not properly thin them; consequently the Tree is exhausted that Year, and is not able to produce a large Crop the next: they suppose what is their own Neglect to be the Course of Nature; and even in the favourable Year the Fruit is worth little.

In thinning of Fruits the first Thing to be considered is their Size: no Man would be so idle as to count the Number of Peaches, for Instance, that should be left to ripen, without Consideration of the Kind. The Nutmeg and the Newington are both Peaches, but the same Vigour of Root, the same Expanse of Tree, and same Quantity of Nourishment, will ripen twenty of the Nutmeg Kind that will be needed for ten of the others.

Next to this Article of Size in the Fruit, the Length of the Bearers on which they are plac'd should be consider'd, and after this, the Condition of the Horizontals, from which those Bearers grow: lastly, the Quantity of Fruit there is in the whole upon the Bearers that proceed from one Horizontal: and so of the rest.

This is a Method of going regularly to work, and this the Gardener ought exactly and carefully to practise in his last Thinning of the Fruit.

We shall bring this to Practice by an Instance: Suppose a strong and healthy Tree, and imagine it prun'd and dress'd in a proper Manner. Upon a Horizontal of a Yard long there will be in this Case, we will say six Branches: these being understood to be of the common Length, will produce a great Number of Blossoms; and the avaritious Gardener may, if these set for Fruit ripen, as he will call it, have a great many Fruit upon them: but they will be ill-flavour'd. If he would know what Quantity will come to Perfection, let him learn from our Experience, till he have confirm'd it by Trials of his own.

In the first Thinning he will have taken off all that grew evidently close, and he is now to consider, 1. How many to leave on for Ripening; and, 2. Which these shall be.

Upon this Horizontal, of a Yard in Length, with its six bearing Branches, there may be left of the common middle-siz'd Peaches about fifteen. This will leave three Peaches on each of the three stronger, and two on each of the three weaker of the Bearers.

The careful Gardener will commonly be able to see this Difference of stronger and weaker Bearers in the common Run of Trees: but if there be no such Difference, let him leave the Fruit at the same Rate alternately, two on one Bearer, and three on another. Before he takes off the rest, let him single out these he is to leave, selecting the most promising Fruit, and those which stand best.

This then is to be the general Rule: fifteen Peaches or Nectarines on six Bearers, upon a Ho-

May. rizontal of a Yard, supposing the Fruit of the middling Kind as to Size: and these will ripen perfectly: they will have the true high Flavour of their Kind; and the Tree will every Year, with due Management, excepting for uncommon Accidents, produce and ripen the same Number.

How much this is better than to have one Year a Load of indifferent Fruit, and another none, let any one judge.

With Regard to the Peaches of other Sizes and Kinds, the Rule is easy: in Proportion as they are larger, fewer must be left upon the Tree; and, as they are smaller, more.

The Difference between the middle Size of Peaches and the largest is not very great, therefore of these the Gardener may leave twelve upon the six Bearers, that is, two on each; but, on the other Hand, the Difference is very great between the common or middling Size of Peaches and the little ones, as the Nutmeg Kinds. These not only require less Room, and less Nourishment, from their small Size, but they are sooner ripe and gather'd, and therefore they less exhaust the Tree.

Of this Kind, five will in the common Condition of Trees ripen very well upon every Bearer; that is, there may be thirty Peaches left upon the Horizontal of a Yard in Length. If the Tree be remarkably strong, there may be alternately five and six, or six upon each Bearer left to ripen; and by the same Rule, if the Tree be weaker, there should be only four and five alternately, or only four upon each.

The Proprietor of a Garden will see by this Account, how very deficient the common Practice is upon this Head.

Thin your Wall-Fruit this Month, says their Director; and they do it their own Way: that is, they leave on twice or three Times as many as the Tree can ripen: hence one half perishes, and the rest is watery and ill-flavour'd. This I have found by long Experience, that when Fruit stands too thick, the Sun Beams which would otherwise give them the true Flavour, only render them flabby: they begin to decay before they are ripe; and the best of them eat like Fallings.

Let the Gardener observe that we have directed this Thinning to be done at twice, or oftener; and that a Week, ten Days, or a Fortnight, according to the Strength of the Tree, pass between these several Operations.

The Reason is plain: if the full Number that set in a favourable Season, were left to take their first Growth together, they would all take that first Growth amiss; for one would starve another: and, on the contrary, if the whole Number to be taken off, were pull'd away at once, the Number left on the Tree would be soon reduced to much less than it need, by the accidental falling of the others.

I never saw that more than two-thirds of those left on after a common Thinning, come to their Growth: tho' the two-thirds in that Way is always much too large a Number. Accidents from Nature will destroy some, and Accidents in the Thinning will occasion others to fall off afterwards, tho' they do not shew it at first.

There-

May. Therefore let the first Thinning be perform'd with Care, not to slack the Growth or disturb the others; and let these stand, according to the Season, eight, ten, or fourteen Days; to shew not only which of them are best and most promising, but whether any have got Damage, in pulling away the others.

The different Time we advise them to stand between the first and second Thinning, is on Account of the different Seasons. In a very favourable Year a Week is sufficient; in an unfavourable one they must stand the longest Time we have allow'd.

The Reason is this: There will be more Hazard of some of them failing in an unfavourable Year: in a more favourable it will be sooner seen which are fittest to be left for Ripening; and they will require to be thin'd the sooner, because all the Nourishment those take in which are to come off, is to the Loss of those which are to stand.

Let those which are to come off be taken away, without touching the others, or even shaking the Branch. This is easily done by a slight Twist; and those which are to stand being carefully chosen, the Gardener may now promise himself so many perfect Fruit.

As to the Choice of these, the best to leave upon the Tree are those which are best shap'd, fairest, and have most Leaves about them.

Those which have a good Cluster of Leaves,

May. or a fair Shoot at the same Joint where they grow, always ripen the most favourably. If the Leaves be too many, they are easily thin'd afterwards, at the Gardener's Discretion: but those Fruit which grow at the Joints where good Clusters of them are, not only thrive best because they are shaded, but because there is much more Juice drawn thither than when the Fruit stands naked.

The Number being thus fix'd upon, the Manner of Thinning is to be consider'd. The common Method is by nipping off the Fruit with the Thumb and a Finger; but this is very clumsy. There are some who use Scissars; and when they are of a proper Kind, that is, long and slender in the Blade, this answers very well.

I have some Years us'd a kind of Scissars made purposely for this Service; but what I have found best of all is a common Penknife, with a long narrow Blade, very sharp at the End; this with a little Twist brings off the Fruit, without disturbing any of the rest.

Let no Consideration induce the Gardener to leave two Fruit so near, as that when full-grown they will touch one another. They often throw each other off; and if this does not happen, they rob each other; and the Parts where they touch are always ill-tasted.

We have been the more express on this Head, because there is no Part of the Gardener's Business so ill practis'd.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

THE Business of the preceding Weeks, dispatch'd as we have directed, leave but little to be done in the present.

There is not an Article more precarious than the sowing of Cauliflower Seed: some have pretended to fix a Day for it, but that is too exact: from the first to the last Day of the present Week will be a certain Period; for it ought not to be done sooner than the one, or later than the other: but which particular Day, will depend upon the Weather, and the Temper of the Ground.

Let the Gardener suit the particular Day, according to the Dampness or Dryness of the Mould, and the dry or showery Season.

Let all the Heaps of Dung be broke and turn'd

over this Week. They will be covered with annual Weeds at this Time: if these were suffered to stand longer, they would ripen and shed their Seeds; but as they will now be destroy'd at their full Bigness before that Mischiefe, they will rot in the Heap, and assist the Dung, by bringing on a new gentle Fermentation.

If the Weather be showery, or there be a Prospect of Rain, sow Turnep Seed.

Let the Ground be very well broke and prepar'd for this; and as the Success depends entirely upon due Watering, if the Clouds refuse that, the Hand must do it; and there must be a frequent Repetition, with moderate Quantities at a Time.

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A

COMPLEAT BODY OF GARDENING.

NUMBER XXXVII.

For the End of *May*, and Beginning of *June*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Curious Plants and Flowers now in their Perfection.

I. DOUBLE PEACH BLOOM ANEMONE.

May.
Pl. 37.
Fig. 1.

THE Gardener will recollect that we have advis'd him to plant some Anemone Roots late in the Season. These will accordingly come after the others into Flower; nor is this Kind the last of them. He knows some Roots bear this late Planting better than others, and we take the present Opportunity of shewing him this is one.

It is an elegant and beautiful Flower; distinguish'd from the common Crimson Kind by the Fulness of the inner Tuft, and Shortness of the outer Petals; and to the most unacquainted Eye obviously by the Colour.

It is one of the many Varieties we owe to Culture from the common fine-leav'd Anemone Stock; and 'tis to that Plant in its plain State, the Student must refer for its Characters.

It is the Species call'd by CAMERARIUS, simply, Anemone: by the BAUHINES, and the Generality of Writers their Followers, *Anemone tenuifolia simplici flore*; and *tenuifolia multiplex rubra*: the fine-leav'd single, and the fine-leav'd double Anemone.

LINNÆUS and VAN ROYEN at one Time call'd it a *Pulsatilla*; but in the last Works of the Author of the *New System*, it is again nam'd Anemone; for he no longer separates that and the

Pulsatilla as two Genera. He adds, as its Distinction, *foliis radicalibus ternato-decompositis, involucri folioso*: Anemone, with the radical Leaves subdivided in Three's, and a leafy Involucrum.

The Student must not think this Name too long; the Number of Species under a Genus always induces a Necessity of particular Distinctions; and LINNÆUS, who has shorten'd the Detail in this, by cutting off the Varieties of Flower, which earlier Writers had consider'd as Species; has yet encreas'd the List greatly, by comprising under the Name Anemone, many before suppos'd distinct Genera. These are, beside the *Pulsatilla* before named, the *Hepatica*, and a great many Plants usually refer'd to the *Ranunculus* Kind.

The Root of this is tuberous, brown, and irregularly spreading.

The first Leaves are of a pale green, divided and subdivided into Three's.

The Stalk is also of a pale green, ting'd with brown, and cover'd with a light silky Hairyness. It is round, a Foot high, and usually wav'd or bent several Ways.

About the Middle, or a little higher than that, stands what LINNÆUS calls the Involucrum of the Flower: by this Term he expresses a Kind of Cup, placed at a Distance below the Flower.

May:

The

May. The Word was first us'd in Descriptions of the umbelliferous Kinds, in which there stands often at the Base of the several main Footstalks a leafy Appendage, and another at the Bottom of each Subdivision. These Appendages, as they in some Degree stood in the Place of Cups, yet could not properly be call'd by that Name LINNÆUS term'd Involucra; and the same Name he has extended to this leafy Appendage of the Anemones.

There grows no other Leaf upon the Stalk.

This has a Swelling where it rises, and more or less perfectly surrounds the Stalk. It is naturally divided in the ternate Manner, or by Three's, in larger and smaller Parts; and always the Division is into Three's, at the Ends of the larger Segments. The Body is of the same pale green with the Leaves, but often at the Edges ring'd with brown.

On the Summit of the Stalk is plac'd one Flower, naked (for this remote Involucrum is all its Cup) elegantly form'd, and much more elegantly colour'd. It consists of a Range of outer Petals, broad and expanded; and a globular Tuft in the Centre, compos'd of innumerable long and slender ones, forming themselves into a Globe.

On the Outside of these, between the round Cluster and the Verge of broader Petals, stand a Multitude of singular Bodies; very elegant in Form and Colouring, and distinct from both: these are a kind of split Buttons, supported on long slender Threads; and they are, in Reality, the Filaments and Antheræ of the natural Flower, degenerated from their original Form and Use, and serving to encrease the Beauty and Variety.

The Petals are sometimes six, sometimes nine, but when the Flower is most perfect, they are twelve. These are of a delicate faint Crimson at the Base, and on the Outside are a little hairy. From the Bottom the Colour grows fainter to the Extremities, and there they are very nearly white. The Crimson they have is faint, and is not universal, but laid in Lines with undetermin'd Edges, as Art disposes the Colours in those figur'd clouded Silks, which do so much Honour to the *English* Looms this Season. The Out-line is undetermin'd, and the Colour loses itself in a vague clouded Edge among the White of the Ground.

This is the Colouring of the outer or larger Petals. The inner Tuft is compos'd of innumerable long and narrow ones; small at the Base, broadest toward the Top, and obtuse at the End.

The Colour in these appears, at a little Distance, exactly what we express by the Term Peach Bloom; a pure White, stain'd with a delicate and fleshy Crimson. When nearer view'd, the Crimson is found dispos'd as in the outer Petals: the Body of the Colour lies at the Base of each; and from this, are Lines and Streaks of a fainter Tinct: these run to the Extremities, and are so well blended with the White, that at a very small Distance they have the Effect of a single Colour.

These small Petals as they approach the Centre, grow yet narrower; and there perfectly occupy the Place of that Head of Rudiments of Seeds, which otherwise would distinguish that Part of the Flower. The little Heads and their Fila-

ments are quite distinct from these, as from the Petals, in Number and Office. They grow to the Receptacle in a double, triple, or quadruple Series, very thick set; and as they are shorter than the inner Tuft or outer Verge of Petals, they are not seen in a general View of the Flower: the outer Petals must be pull'd back, or the inner drawn forward, in order to discover them; but when thus disclos'd, they form a very singular and elegant Part of the Flower.

The Filaments are Crimson, and the Buttons Purple; pale, and thin in the Middle, deeper and thicker at the Edges.

The Structure of the double Anemone has not been yet well understood, or these Parts duly regarded. We are to refer the Student, who would trace the Classical Characters of the Plant, to the common single fine-leav'd Kind: there he will see the natural Disposition of the Parts, and thence he will be led to understand what we are about to say here of the Construction of the double Flower.

In the single he will find a Cluster of Germs or Rudiments of Seeds, each furnish'd with its Style and Head, occupying the Centre of the Flower, and surrounded by numerous capillary Filaments, of about half the Length of the Petals, terminated by double upright Buttons. These Filaments grow to the Receptacle; and as the numerous Rudiments of Seeds with their Styles shew it one of the *Polygynia*, the Number and Place of the Filaments refer it to the *Polyandria*.

In the double Flower he finds these numerous Crimson Threads fix'd to the Receptacle, and terminated by erect doubled Heads, the thin and pale Part in the Centre making the Division. These are the vitiated and alter'd Filaments and Buttons: they now serve only the Office of beautifying the Flower; for as there are no Rudiments of Seeds to impregnate, they have no Farina. The numerous narrow Petals that form the globular Fulness of the Flower, occupy the Place of the Head or Cluster of Rudiments.

There is in the Centre a small oblong Head, the proper Receptacle of the Rudiments, and their succeeding Seeds; but the Luxuriance of Culture, raising these narrow Petals from that Receptacle, leaves no Room for those Rudiments of Seeds. The Receptacle however has its true Form in this double State, and toward the Top is dotted, as in those Plants which have single Flowers.

Thus will the Philosophical Florist understand how it is that Nature doubles Flowers. Tracing this from its simple Origin, he will find the Form there to be a Flower of six Petals, in two Series, with an oblong Receptacle cover'd with Rudiments of Seeds, and surrounded by numerous Filaments, with their Buttons.

Culture encreases the Number of the proper Petals to nine or twelve, adding one or two Series: it colours the Filaments, and their Heads with Crimson and with Purple, and makes them firmer and more glossy; and in the Place of Rudiments of Seeds, it throws from the Receptacle Petals of a peculiar Form, in Series quite innumerable.

The Plant in its simple State is wild in the *Greek*

May. *Greek Islands*, a single but very beautiful Flower: from this the *Turkish* Gardeners first raised the elegant Varieties.

With us this Kind is only to be produced from

Seeds of the single fine leaved *Anemone*, in the May. Manner we directed in our last Number; and being so raised, it must be propagated by parting the Roots; for we see itself ripens no Seeds.

2. THE GUELDER ROSE.

Pl. 37.
fig. 2.

The Gardeners Surprise would have been too great if under the Figure of this well known Shrub, we had wrote the Name *Viburnum*, but he is to be told no other properly belongs to it.

It is an old Inhabitant of our Gardens, and is a Variety from luxuriant Culture, whose plain and simple Original is nothing more than the common Water Elder.

The Plant in both States has been long known, and long a Favourite in this full Beauty in our Gardens.

The Writers of late Times have all described it, but under various Names: the more common Tree of the Genus to which it belongs is sufficiently known, but it did not occur to them that the Characters were the same.

DODONÆUS refer'd it to the Elder; distinguishing it from its Place of Growth, by the Addition of *Palustris*.

The BAUHINES, and the Generality of others call it *Sambucus aquatica*. LINNÆUS and many others *Opulus*; but in his latest Writings this Author has with Justice refer'd it to the *Viburnum*. He adds as the Distinction of the Species, *foliis lobatis, petiolis glandulosis*: *Viburnum* with lobated Leaves, placed on glandulous Footstalks.

This is its proper Name in the common wild State, in which the Clusters of Flowers are nearly flat; in the elegant Condition to which Culture raises it, wherein we describe it, and wherein the Clusters are globular, he calls it *Rose Viburnum*.

The Gardener sees the *English* Name should be alter'd, and he will do well hereafter to call it the *Globe flower'd Viburnum*.

It is an irregular Shrub of eight Foot in Height.

The Root spreads far, the Stem is slender, the Bark brown, and the Wood white and brittle.

The Leaves are large and divided into three or more Parts, nearly to the Footstalk, which is glandulous. These Parts are called the Lobes of a divided Leaf; and hence the Leaf itself is nam'd lobated.

The Flowers are extremely beautiful, but their conspicuous Elegance is owing more to their Disposition than their single Form, for they are small.

In the wild State, a few large, white, distinct Flowers edge the general Umbell, and the rest are small, cluster'd together, and yellowish; opening later, and having little Beauty.

In this elegant Condition to which Culture has raised it in our Gardens, the Flowers are all of the large, distinct, white Kind; and instead of

edging a flat Umbell, they are cluster'd into a perfectly globular Tuft.

Each is placed in its proper Cup, which is small, dented in five Places, and permanent.

The Body of the Flower is form'd of a single Petal, tubular a little way at the Base; expanded thence in a campanulated Form, and cut into five regular obtuse Segments, which naturally turn back at the End. In each stand five small Filaments with rounded Buttons, and under the Receptacle is a roundish Rudiment; from which in the Place of a Style rises a Gland of a pear-like Shape, with three obtuse Heads.

The five Threads refer it to the *Pentandrous* Class, the fifth in the LINNÆAN System; and the three Heads place it in the third Section, including the *Trigynia*.

These Parts are to be sought in the wild or common State of the Plant, where every Flower is followed by a roundish red Berry, containing a single hard Seed. The Globular or Garden Kind here figured ripens no Fruit, and the other classical Parts are therefore less distinct and perfect.

Culture of the GUELDER ROSE.

The Plant in its wild State is Native of our own Country, and almost every other Part of *Europe*. The *Dutch* first brought it from their Meadows into Gardens, and gave it the round Fullness of the Bunch of Flowers. From them it obtain'd the common but unartful Gardener's Name; for *Guelder Rose* is properly written *Guelderland Rose*.

The natural Soil shews what we are to attempt in Gardens where this Shrub is raised: a rich black Mould with some Moisture is the great Secret. This is not enough regarded; and consequently we seldom see the Flowers in their full Lustre; and the Tuft in its proper Bigness.

The Gardeners also have found the Way to make a Merit of this Mischief: they propagate a Variety of this Shrub with painted or variegated Leaves; and esteem it the best and finest Kind: this has been starved in order to bring it into that painted Condition originally; and so long as it retains the Colouring of the Leaves, it will also keep to those smaller Tufts of Flowers, which were the natural first Attendant of it.

The Directions of Gardening Writers confess this; they order the Shrub to be planted in a dry and poor Soil, otherwise, they say, it will return to the original State.

Not only this double or globe tufted Kind is kept

May. kept in Gardens; the other has also its Place; this for the Flowers, that for the Fruit; which being large and in great Tufts, is a fine Variety among other Trees.

We see that when either of them has by Accident been planted near a Pond, or in the Way of Damp, the Flowers are vastly finer.

What happens to these let the Gardener who studies his Art according to our Rules, carefully provide; and he will always produce this and such other Shrubs in their full Perfection.

Let him chuse a Piece of the Ground near where there is Water, and digging out the Mould to some Depth, let him fill up the Place with fine black Meadow Earth, mix'd with a third Part of Pond Mud, and a little rotted Cow Dung.

In this plant some Suckers from the Root of a thriving Tree that has stood where there is Moisture, and consequently bears tolerable Tufts of Flowers.

The Suckers take Root freely; and they will require no farther Care, but covering the Ground about their Stems the first Winter, and gentle frequent Waterings the succeeding Spring.

The Time for planting these Suckers is in September: and they may be either planted out into a Nursery for three Years, and then brought

May. into the Garden in their full Perfection, or set at once in their Place. The Circumstances of the Garden must determine this; but the planting the Suckers at once where they are to remain, is the secure Way to have handsome Shrubs.

There is a great Advantage in the Hardyneſs of this Shrub: it is able to bear any Severity of Cold: the North Winds never hurt it, and nothing is to be fear'd for it but Drought and too much Sun.

Therefore let the Gardener select for it such Parts of his Ground as will scarce suit with any Thing beside: the Consideration of a damp Bottom we have named already, and where there is this he can scarce fail.

Some propagate it by Layers; but this is a tedious and troublesome Way. They require to be laid deep, and to have frequent Waterings. In a Year from the laying they may be transplanted for Use, and they will grow freely: but they are no way preferable to those Suckers the Root furnishes naturally, and which require only to be taken up and put into the Ground.

The best Height for this Shrub is about nine Feet: it will grow more if permitted, but a skilful Gardener will chuse to give it a good full Head at this Height, and it will be cover'd at this Season with Flowers.

3. GREAT DORONICUM.

Pl. 37. The Gardener is not unacquainted with this Fig. 3. Plant, which altho' it have something the Aspect of a Weed, tho' of a bold and noble one, has been now long honour'd with a Place among Flowers, and for many Reasons deserves it: to the Singularity of its Aspect may be added its Virtues, and its easy Culture.

All the Writers on Plants have describ'd it, and if we except DODONÆUS, all under the same Name *Doronicum*, tho' with various Additions. That Author gives it the Name *Aconite*, mixing it by that Title among a Set of Plants most unlike to it in all Respects. Our Gardeners know it by the single Name *Doronicum*, or *Leopard's Bane*.

The Authors who have known other Species, add as the Distinction of this, Epithets from the Size of the Plant, the Form of the Leaves, and other such Particulars.

Some, as it is the most common, call it *Doronicum vulgare*; others *Doronicum latifolium*, broad leav'd; some *Doronicum Maximum*; and others, *Doronicum Pardalianches*, as we, *Leopard's Bane*, from its supposed poisonous Qualities.

DODONÆUS, who calls it *Aconite*, adds to the Confusion by annexing this Distinction.

The BAUHINES suppose the Scorpion rooted *Doronicum* different in Species, but LINNÆUS ranks it only as a Variety. He adds as the Distinction of the Kind, *foliis cordatis obtusis, radicalibus petiolatis, caulinis amplexicaulibus*: *Doronicum* with

Heart-shap'd obtuse Leaves; those from the Root having Footstalks, and the others surrounding the Stalk at their Base.

The Root is white and of a singular Form, divided into several Parts, and spreading under the Surface: the principal Divisions are jointed, and have a kind of scaly Covering; from the lower Parts of these run down into the Earth a few Fibres.

These Fancy has represented as the Legs, and the larger Parts as the Bodies of Scorpions; and hence the Plant has been named *Doronicum radice scorpii*, Scorpion rooted *Doronicum*.

Where the Soil is light and fine, these Divisions of the Root are more numerous and spreading, and the Plant from the same Reason more branch'd.

It is in this State the earlier Writers have called it particularly Scorpion rooted, and the latter have supposed the more usual Appearance of the Plant a distinct Species, distinguishing it by the Breadth of the Leaves without that Addition.

The Leaves which first rise from the Root are supported on tender Footstalks, and are large, broad, obtuse, and of a pale but pleasant green; high rib'd on the under Side, and cover'd with a slight and delicate silvery Down.

The Stalk is thick but tender, mark'd like the fluted Column of some Order, with a Number of regular Ridges, hollow'd between; of a pale green,

May. green, cover'd with a light Hairyness, a Foot or more in Height, hollow'd, and divided into a few Branches.

The Leaves are placed singly at considerable Distances on this, and are of an Arrow-headed Shape. They are broadest at the Base, where they surround the Stalk more than half, and sometimes entirely; and they become gradually smaller at the End, where they terminate obtusely: they are waved and indented at the Edges, of a pale green, with silvery Hairs, and they have high whitish Ribs on the Under Surface.

At the Top of the Stalk and of the Branches stand three or four smaller Leaves closer to one another, and from the Bosom of each rises a Stalk with two or three Buds for Flowers which open in Succession. They are large, yellow, and of the radiated Kind: they have not the Aspect of Garden Flowers, yet they are not without Beauty on a near Examination.

In the Bud the yellow Petals are laid together so as to form a little golden Button; over which the Segments of the Cup, which are much longer, meet in a loose but delicate Manner, defending without hiding the Rudiment of the Flower. In a State a little more advanced toward Ripeness, the Petals open, and shew, tho' still within, the broad Rudiment of the Disk, form'd of pale yellow rising Dots.

The Flower full open'd is an Inch and half in Diameter, form'd of a rounded rising Disk, crowded with innumerable Floscules, and of a circular Series of Rays; the whole enclosed at first, and afterwards defended by a delicate pale green Cup. The Flower is yellow throughout, but the Disk has something of an Orange Tinct; and the Rays are perfect Gold.

The Plant is one of the *Syngenesious* Kind, the most difficult to be understood by the Student of all the LINNÆAN Classes.

We have in some of our first Numbers deliver'd the Characters of that Class at large; and shall take the Opportunity of illustrating them farther by this Flower, in which they are extremely distinct and plain.

The Stalk swells into a turbinated Lump for the Support of the Flower, and from the Head of this rise thirty elegant green Leaves, forming a Cup which widens all the Way upwards, and is of more than half the Length of the Rays of the Flower when expanded.

These Leaves are placed in two Series, an outer and an inner; and they are narrow, swelled at the Base, broadest at a little Distance above that Part, and they terminate in a Point like a Hair.

Let not the Student suppose it an Error that we make these Leaves of the Cup thirty, because LINNÆUS says they are about twenty: 'tis not from his Writings we draw the Characters, but from Nature.

The Disk of the Flowers is composed of a vast Multitude of tubular Floscules, and the circular Verge of Rays exceeding by two or three the Leaves of the Cup: they are naturally thirty as the others; but more frequently two or three more.

The Floscules in the Disk stand thick and per-

fectly irregularly. Each is small, oblong, wide toward the Top, and at the Rim cut into five pointed Segments spread out like the Rays of a Star.

In the Midst appears a kind of upright Column, of a deeper yellow than the Segments: this is composed of the Buttons of the Flower; they are long, slender, and placed regularly Side by Side, so that their Edges join, and they form a kind of Cylinder: this is pierced by the Style; whose Head or Stigma rises above the Summit of the Cylinder to receive the impregnating Powder from the Buttons, and is nip'd at the Top.

Each of these Floscules has under it a single Rudiment of a Seed crown'd with a Quantity of fine, silky, silvery colour'd Down. This surrounds the tubular Part of the Floscules, and from their being close set; is press'd every Way regularly and evenly round them; so as to form a kind of silky Cup to them.

The Rudiments of the Seeds are placed close upon a rising Receptacle; and they leave Dots behind them when they are removed.

This is the perfect Structure of the tubular Floscules, which form the Disk in the Flower: we are yet to examine the Rays.

These are long, flat, narrow, and at the End cut into three Parts; they naturally spread themselves out strait; but when the Flower is decaying they turn backward.

Each of these Rays has at its Base the Rudiment also of a single Seed: from this it rises a little Way tubular, and is there small, tender, and whitish: from the Rudiment of the Seed springs a single thready Style, which rises a little beyond the tubular Part, and there splits into two Heads.

The Body is white, and the Heads are yellow.

There are no Filaments in this Flower, but its tubular Base is surrounded as in the others, with a white silky Down rising from the Seed.

These are the two Kinds of Floscules which compose the *Doronicum* Flower. In the tubular ones of the Disk we see there are the Male and Female Parts, the Filaments with their Buttons and the Style; in the Rays which are called ligulated Flowers, there are only the Female Parts, the Style with its double Head. The tubular are therefore called Hermaphrodite Flowers, and the ligulated Female: this is the great Distinction; and this is in a manner universal throughout the *Syngenesious* Class.

The Parts are very conspicuous in this, we therefore have selected it for the Explanation; and as the Plant is now flowering, we request the Student to lay a Flower of it before him as he reads, to compare the Descriptions of the Parts with the Parts themselves; and by this Means not only to confirm these Observations, but imprint the whole Doctrine in his Memory.

For this Purpose let him select a Flower that is just open'd; one in which only a single Circle or few more of the tubular Flowers are open'd, and that but newly; for it is in such a Flower, and such only, the Parts are distinctly to be seen.

'Tis commonly said that these Forms in the
5 T Flowers

May.

May. Flowers are to be found only in Books, that in Nature all is not so distinct and evident: the Reason is, that those who have examin'd Nature have not chose properly.

When the Flowers are fully open, no Part is well to be seen; the Ends of the Rays curl back, and their trifid Extremity is obliterated or maim'd.

The Dust from the Buttons of the first open'd Floscules has scatter'd itself over the Disk; their Segments are faded, and the rest are so crowded together that all is Confusion: but in a Flower of proper Ripeness 'tis not so.

Let our Student chuse one newly open'd, whose Rays stand oblique, and have not begun to curl back at the End, and let him thus examine it. First viewing it from behind let him take off one Leaf of the Cup, and with a Pen count the remaining Number, separating them as he takes the Account; the Gap where one was taken off will shew him when he has gone the Round.

Next let him hold the Flower up to the Light, still viewing it from behind: he will plainly see the trifid Top of each Ray. Let him then separate one of the Rays: he will find the Rudiment of the Seed come with it: and just above the Top of its tubular Part, he will perceive the divided Head of the Style. Let him then separate with the Point of his Pen one of the tubular Floscules, and he will distinguish all its Parts; the Rudiment of the Seed at its Base, the Covering of silvery Down on its Tube, the five star-pointed Segments; and the cluster'd Buttons forming a Cylinder, out at whose Top just appears the Head.

The Filaments are short, and cannot be seen but by tearing open the Floscule.

The Parts thus studied once will never be forgot. There is a Method of doing Things, by which alone they can be seen with Ease, and

these minute Directions will be found far from May. frivolous.

The Seeds ripen under the Floscules of the Disk, as well as under those of the Rim; and therefore the Section to which Doronicum belongs is that of the *Syngenesia Polygamia superflua*.

Culture of this DORONICUM.

The Plant is a Native of *Europe*, and principally of the Northern Parts: it thrives best on the Sides of Mountains where there is good Mould, Moisture, and some Shade.

These must be our Rules for its true Culture. It requires little Care, but whatever the Gardener admits into his Ground; we would have him raise in the most full Perfection.

Let him chuse for this Plant a rising Part of the Ground, where there is some Shade; and throw into a small Spot the following Compost: Mix two Bushels of Meadow Earth with one Bushel of old Cow Dung, and a Peck of Sand.

In this plant in Autumn some Pieces of the parted Roots that have good Buds; and cover them half an Inch with Mould: they should stand at fourteen Inches Distance, and they will after this require only the common Care of Weeding and now and then Watering.

The Seeds will also shoot freely: they should be gather'd as soon as ripe, and sowed on the same Soil, and in the same Situation we have directed for the Roots; either Way there will be a Supply of handsome Plants.

The Root of this Plant possesses a very singular Virtue against Disorders of the Head, but it must be used in very small Quantities: 'tis one of those powerful Medicines which in immoderate Doses act as Poisons.

4. DOUBLE ORIENTAL NARCISSUS.

Pl. 37. This is a Season at which the latter Daffodils are
Fig. 4. in their full State of Perfection; and this among their almost numberless Kinds, is not the last in Beauty.

Our Gardeners have been long acquainted with the Plant, and it deserves to continue in their Esteem. They know it by the Name of the Noble or Constantinople Narcissus.

C. BAUHINE has called it *Narcissus luteus Constantinopolitanus*; and BESLER much more properly, *Narcissus orientalis nobilis seu polyanthus mixtus*: the Flower is indeed, as expressed by this Denomination, of a mix'd Colour, rarely perfectly yellow throughout.

LINNAEUS, who refers the numerous Daffodils of our Gardens to a few original Species, ranks this among the Varieties raised by industrious Art from the Tazetta: This he distinguishes by the expressive Name, *Narcissus spatha multiflora, nectario campanulato foliis planis*: flat-leav'd many flower'd Daffodill, with a bell-shaped Nectarium.

The Student recollects that what Gardeners call the Cup of a Daffodill, is the Nectarium of the Flower; and he will find the rest of this Name equally intelligible and expressive.

The Root is roundish, large, and cover'd with a tough brown Skin.

Three or four Leaves rise from it: long, narrow, flat, or very little hollow'd; of a blueish but agreeable green, and of a firm Substance.

The Stalk is round, firm, upright, and fourteen Inches high.

At its Top there stands a very noble Cluster of Flowers, six or more: each has its separate Footstalk an Inch and half in Length; and these all rise together from the Head of the Stalk, where they are originally enclosed with their Flowers, in a green flat Scabbard.

They are large and elegant even when single, but in the double State wherein we represent the Plant, there are few Flowers that exceed it in Elegance.

The

May.

The Colour is mixt of White, a faint, and a deeper Yellow. These are dispos'd in various Degrees and Shades; and in different Flowers with a great deal of elegant Variety. Sometimes there is very little of the White, sometimes absolutely none; but, in that Case, the Variety of Yellows is still pleasing; the deepest Colouring being in the Middle, and the Yellow growing paler from thence outwards, even when it does not become any where altogether White.

The Characters of the Class are not to be sought in this Flower, because the Multiplicity of Petals obliterates, or at least impairs them. In the plain and simple *Tazetta*, they are as in the other Daffodils.

The separate Flowers have no Cup, but the general Scabbard serves that Office to them all.

The Flower consists of a Nectarium and six Petals; and to the Tube of the Nectarium are fix'd six Filaments, crown'd with oblong Buttons. Under the Receptacle of the Flower is plac'd the Rudiment of the Seed-vessel; and from this rises a slender Style, longer than the Filaments, and crown'd with a trifid Head.

These Parts, which are conspicuous enough in the single Flower, refer the Plant to the *Hexandria Monogynia* of LINNÆUS; his sixth Class, and its first Section.

Culture of this NARCISSUS.

The Plant in its simple State is a Native of the East, and of some Parts of Southern Europe. It succeeds best where there is a light rich Soil; and the Sea or Salt Rivers in the Neighbourhood. This is not essential to its Growth; but as the Flowers are always finest when the Plant has this Advantage, a good Gardener will not neglect to give it.

Therefore let a Compost be prepar'd thus:

Mix a Barrow of fine Mould from an upland Pasture, with a Bushel of Wood-Pile Earth; a Peck of Sand, two Quarts of Sea-water, or, in want of that, of Brine; and a Quarter of a Peck of Sheep's Dung.

In this sow the Seeds, or propagate the parted Roots, as we have directed for the other *Narcissus*'s.

5. DOUBLE SCARLET LILLY.

Pl. 37.
Fig. 5.

This will be found at first Sight a Variety rais'd by luxuriant Culture; but it is so elegant and specious, and at the same Time so singular, that no Pains should be call'd too great to produce it.

BESLER has figur'd it under the Name *Lilium cruentum flore pleno*: the double bloody Lilly; but the Colour is not well express'd by that Term: it is a deep Scarlet, but not Blood-Colour.

In the common or single State all the Writers on Plants have mention'd it; and under its various Appearances from different Accidents of Growth, have call'd it by various Names, as well as from the different Tincts of Red in the Flower; hence we see it describ'd under the Title of *Lilium Phœnicium*, *Lilium rubrum*, and *Lilium purpureo-croceum*. The Granules, which serve for its Propagation as Seeds, have also been made another Subject of Distinction; and, when possess'd of these, it has been call'd *Lilium bulbiferum*, as if another Species.

All these LINNÆUS very justly refers to the one original Kind, which he happily characterizes by the Name *Lilium foliis sparsis, corollis campanulatis erectis intus scabris*: Scatter'd-leav'd Lilly, with bell-shap'd upright Flowers, rough within. To this the present double Flower is obviously to be refer'd, as well as the others, tho' vastly superior in Beauty to them all.

The Root is large, rounded, and compos'd of numerous Scales.

The Stalk is round, upright, firm, and two Foot and a half high.

The Leaves are plac'd irregularly, and are very

numerous: they are long, narrow, wav'd and sharp-pointed: they are of a firm Substance, and their Colour is a deep strong Green. The Rib is pale, and the whole Leaf is of a shining Surface.

The Flower stands on the Top of the Stalk, large, specious, and in the highest Degree singular. It is plainly of the Lilly Form, but full of numerous Petals, and greatly exceeding any other in Beauty.

The Colour is a fine deep Scarlet, covered with Spots of a dusky but not disagreeable Red.

The Petals are oblong, wav'd, and pointed, and of a fleshy Substance. Their Number is about Thirty, and they stand open in the Manner of Rays of a Star.

In the common Scarlet Lilly there are frequently two or three Flowers upon the Stem, each supported on a slight Footstalk; and 'tis in this State of the Plant the Student is to trace its Characters.

He will in that Kind perceive the Flower rising naked from the Stalk, with a small bell-shap'd Base, and dividing thence into six large Petals, with thick, bent Points: toward the Base of each there is drawn a Line lengthway, which is the Nectarium.

In the Centre stand six Filaments, with large, oblong, incumbent Buttons, and in the Midst of these rises an oblong Germ, with a cylindric Style of the Length of the Flower, terminated by a triangular Head.

This is the natural Condition of the Flower; and this refers the Plant to the *Hexandria Monogynia*

May. *gynia* of LINNÆUS his sixth Class and first Section.

From this natural Condition of the Flower we shall be led easily to understand the Nature of that specious and singular Form in which it appears in the Plant here described.

We have seen that in most double Flowers the Parts of Impregnation are obliterated, the Fulness of the Petals taking the Place of them; on the contrary, in this Flower instead of six there are ten Filaments; or at least a larger than the natural Number.

Let us recollect, that usually they are two or more Flowers on this Plant; but in the double State only one: and we shall thence find that the Origin of this Doubleness is probably from the joining or uniting of the Footstalks of the two or three Flowers into one Body; whence also the Petals form only one Flower.

This is the Origin, but this does not answer the whole Purpose; for if the Flower consisted of the three single ones united, the Petals would be but eighteen, and the Threads with their Buttons would be of the same Number; whereas the Petals are here thirty, and the Threads only ten.

Nature has taken Advantage of the first Condition of the Flower thus formed of two, or three, or more, and has added from the Luxuriance of Culture many more Petals than they would have contained; reducing the Threads in Proportion.

Thus is formed this most specious Flower, not

as other double ones by the mere Exuberance of Nature, but from this assisted by an accidental Union of two or more natural Flowers. May.

Culture of this LILLY.

This elegant Variety can only be raised by Seed; and when once obtained, must be increased by Off-sets.

The Plant, in its wild State, is Native of the East, and of some Southern Parts of *Europe*, and it there grows always in a damp rich Mould.

This should be the Rule for its Soil. A Mixture of two Parts, Meadow Earth and one Part Pond Mud, with a little rotted Cow Dung, will answer very well.

The Seeds should be sowed from a good Flower, and sown on a Bed of this Compost in *August*. They will require the common Care of seedling bulbous Plants, as we have directed treating of the Fritillary; and when they come to flower, there will be many Varieties. If a double one do not appear from this first sowing, the whole must be repeated; and when one of these is obtained, the Propagation must be by Off-sets, which encrease very fast, and require the same Soil.

Once in three Years the Roots must be taken up, and their Off-sets separated. This should be done in the End of *July*; and they should then be planted again in Beds of the same Compost.

6. DOUBLE WOOD ANEMONE.

Pl. 37.
Fig. 6.

This is a very humble Flower to be ranked among the Anemones, but it is properly and truly of that Kind, and is not unworthy a Place, provided it be rightly chosen in the best Gardens; though a Native of our own Country.

The original Plant for this double Flower is a Variety, as in other Cases, is common in Woods, and is described by all who have written on the *European* Herbs: and most of them have given it the proper Name Anemone. Some, thinking so mean a Plant unworthy a Title commonly allotted to the specious Kinds, have called it *Ranunculus*, adding *Phragmites albus*, and *Nemorofus albus*.

Those who have given it the proper Name Anemone, keep the same Addition of *Nemorofa alba*.

LINNÆUS, more correct in his specific Denominations, calls it, *Anemone feminibus acutis, foliolis incis, caule uniflora*: sharp seeded Anemone with divided Segments, and one Flower on the Stalk.

The Root is oblong, irregular and brown: it runs under the Surface, and is hung with many Fibres.

The Leaves are placed on long slender Footstalks, and are large, of a deep green, divided

into three principal Parts, and those again deeply cut on the Edges.

The Stalk is six Inches high, tender and reddish, not at all branched; and on its Top stands a single Flower.

This in the wild and natural State of the Plant is large, white, and composed of six Petals placed in two Series, as the Flowers of the other Anemones: like them, by good Management, it will become double, and in this State is very beautiful.

There will often, in the wild and single State of the Flower, be a Blush of Crimson with the White, which gives it a very considerable additional Beauty; in the double State it preserves the same Tendency to this Mixture, and becomes often of a true peach-blossom. This is extremely beautiful in the double State; because the Shades are innumerable among the Cluster of small loose Petals.

To trace the Characters of the Plant, the Student must be refer'd to the wild single Flower. This he will find like the other Anemones naked, composed of two Series of Petals, with a vast Cluster of Threads in the Midst, crowned with doubled Buttons, and in their Centre a Head or Cluster of Rudiments of Seeds: the Threads he will



The Guelder Rose

Double Peach Blossom Anemone

Great Doronicum

Double Oriental Narcissus

Double Scarlet Lilly

Double Wood

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May. will find adhere to the Receptacle, and the Rudiments of Seeds each crowned with its Style: the Plant is therefore one of the *Polyandria Polygyna* of LINNÆUS.

Culture of this ANEMONE.

In the wild State this Plant thrives best where there is moderate Shade and Moisture, and a light deep Soil. In the Garden therefore the proper Place for it will be under a Hedge, or in some shaded and damp Corner. Let some one of the light Composts be thrown into such a Spot,

a Foot deep; and Seeds scattered over it in Autumn, saved from a wild Plant.

They will require little Care, but must be weeded at Times and water'd.

Among the Plants there will be found some with more than six Petals in the Flower, these must be marked for Seed; and that being sown in the same Manner, will naturally afford some perfectly double Flowers.

These must afterwards be propagated by parting their Roots, for they ripen no Seed themselves.

May.

C. H. A. P. II.

The Management of the Flower-Garden, for this Week.

THIS Week should be got into the open Ground the Remainder of the Annuals raised in hot Beds for the Autumnal Flowering.

Let the Holes be opened large enough and deep: let the whole Ball of Earth be shaken out of the Pot; and the Fibres trimm'd off all round: let the Ball with the Plant be set upright, and the Mould put in carefully about it: then a good Watering given, and a Stick thrust in to tie up the Stalk: the double Balsams not removed before, must be thus managed, and the Amaranths, Love-Apples, Capsicum, and Palma Christi.

The best Opportunity for doing this is the cloudy Evening of a mild Day: if the Plants flag the next Day, they must be shaded from the Noon Sun, and watered constantly in the Evenings till well rooted. According to the Season this will require sometimes to be done sooner, sometimes later: but when the Weather is settled in warm is the true Time.

After this, they must be kept free from all Weeds, and watered during the whole Period of their Growth, as they require it.

Let the Gardener now look over those Plants of the Anemone, and other Kinds which he had marked for Seed: once in a Week let him break the Surface of the Beds all about them; and every two or three Days allow a moderate Watering, unless the Season be showry. As soon as he perceives the Seeds of any of them attain their due Bigness, let him cease Watering, and tie up the Stalk, close under the Head, with Care to a firm Stick, to prevent the Effects of the Wind in shaking the Stalk, and blowing off the Seeds.

This is a very good Time for propagating the common Green-house Plants by Cuttings; and let it be done in this Manner: fill some Pots with light and rich Mould from any of the Composts of that Kind; or from a rich and well managed Border in the Garden; and if the Myrtle be the Kind intended to be propagated, chuse a Parcel of good Shoots from the Shrubs; they must be seven Inches long, or thereabouts, and they should

be such as are robust; not tender ones drawn by too much Shelter.

Take off the Leaves at the Bottom three Fingers breadth high, and twist the Stalk in that Part carefully: then open some small Holes in the Mould, and plant the Cuttings; several in each Pot: they must be set in as deep as they have been stripp'd, and the Mould gathered carefully about them: they should stand two Inches and a half apart, and the Mould must be settled by a careful Watering.

Then set the Pots under a Hot-bed Frame, and lay between them, and about them, some old Tan.

Shade the Glasses with Mats from Eleven to Four every Afternoon, except in cloudy Weather; and as the Mould dries in the Pots, keep it gently moisten'd: once in three Days is usually enough; but there can be no exact Rule. The only Way to judge when they want it is, to examine the Condition of the Mould at the Edges of the Pot.

At Noon every Day the Glasses must be raised, and Air given to the Plants; and this must be encreased as they root better, and get more Strength.

About the Middle of July the Cuttings will be well rooted, and they will shew this by beginning to shoot.

There must be from this Time more and more Air allowed them till perfectly inured to it, and in five Weeks more, that is toward the End of August, they must be set out in the open Air with the Green-house Plants.

Thus they may stand till the first Week in October; and they must then be housed with the rest.

From Time to Time they must be watered; and they must be carefully kept clear from Weeds and from decay'd Leaves all Winter.

In the Beginning of the following April they must be planted out separately, and kept in a

May. shady Part of the Greenhouse, till the Time of setting them out with the other Plants.

In removing them into their separate Pots, Care must be taken to preserve a Ball of the Earth to each; and the Mould of the Pot must be very carefully closed; and kept in a due Temper with regard to Moisture, till they are perfectly rooted in the new Earth.

This which we have illustrated in the single Instance of Myrtle, holds good in regard to most of the shrubby Greenhouse Plants; only that they must be manag'd with more Care as they are in their Nature more tender.

The Geraniums are propagated with great Ease this Way, and the Leonurus, Othona, Sage of Africa, and the Generality of the others.

The succulent Plants of many Kinds should also

now be propagated by their Cuttings; but these must lie ten Days upon a Shelf before they are planted, otherwise they will rot in the Mould.

This Week therefore let the Gardener take off his Cuttings of the Cereus Kinds and the like, and lay them to harden; for the second Week in June is, in general, the best Time for planting them.

One old Plant of each Kind should be kept for a Breeder.

The Stem is to be cut off at six or eight Inches length the first Time, so that only one cutting can be then had from one Plant; but after this there will rise many young Shoots from the Part where the old one was cut off; and these when they are about nine Inches high are excellent Cuttings for propagating the Plants.

May.



S E C T. II.

The Management of the NURSERY, for this Week.

LET the Gardener look to his Beds and Boxes of seedling Spring Flowers. The Leaves will be decay'd by this Time, and he must refresh their tender Roots by a fresh Covering of the same Mould.

Let the Surface of the whole Bed or Box be gently raked together, to gather up all Moss or seedling Weeds; and in doing this, the utmost Caution must be used not to disturb the young Roots of the Plants: after this, half an Inch Depth of the same Mould must be sifted over them; and thus they are to be left for the Remainder of the Summer, only taking Care to keep them clear from Weeds.

The great Management of the several Parts of the Ground where Trees and Shrubs are planted, consists only in two Articles, Weeding and Watering. Weeds grow up apace, and the Earth is naturally dry: one of these two Causes may destroy many of the tender Kinds; both will endanger even the hardiest.

Let the Seedlings be first look'd after, for they are easiest damag'd. Let the Beds of these be weeded always by Hand; and Care taken not to disturb the young Plants. After weeding let them be water'd every Evening: and as the Weeds had shelter'd them in some degree before, it will now be very proper to defend them from the Noon Sun by a Reed Hedge.

Where the Trees are of more Growth, and planted out in Rows at due Distances, nothing is so proper as digging between them with a Spade. This has all the Advantage of the famous Horsehoeing Husbandry; and at the same Time that it destroys Weeds, gives the Trees new Vigour.

This Week is a proper Season for laying the Branches of the Passion-flower, the Clematis, and other climbing Shrubs.

The Earth must be kept moist by frequent Waterings; and with that Caution the Heat of the Season will be very serviceable in promoting the shooting out of Fibres.

Let the Branches be such as can be brought down with least Force; and let them be twisted and pierced through with an Awl in several Parts where they are to come under the Mould. Let them be cover'd four Inches; and peg'd down in two or three Places; that neither the Springyness of the Branch itself, nor the Force of the Winds may endanger the tearing of it up.

Many Layers carelessly manag'd are torn out of the Ground; and beside these, a great many are destroy'd by shaking, just as they are shooting out their Fibres, though they are not raised out of their Places: the Reason of their failing is not seen; but in this careful Management it will always be prevented.



S E C T. III.

POMONA, or the FRUIT-GARDEN.

THE Season for inoculating the several Kinds of Stone Fruit is approaching, and let the Gardener this Week look over his Stocks,

examine their Condition, and mark such as he intends to use for the earlier Kinds.

He is sensible that there are two Heights at which

May. which the budding may be perform'd, lower when they are intended for Dwarfs, and higher when they are design'd for Standards. For the first Purpose six or eight Inches above the Ground is the Height; and for the other, five or six Feet.

Let him examine the several Stocks that are in best Order; and mark by different Sticks such as are fit for one Purpose, and such as are suited to the other; taking Care that there be in each a smooth and good Piece of Bark at the intended Height of Budding.

A Fortnight or three Weeks hence, according to the Nature of the Season, will be the proper Time for beginning this Work, and we shall then give the necessary Directions.

Toward the End of this Week let the careful Gardener go over all his Wall Fruit Trees. Where any Leaves are decay'd, or harbour Insects, let him take them off: where fore-right Shoots have been produced since this last Examination, let him in the same Manner as he did then, rub these off; and where such grow in a better Direction, as will be wanted the succeeding Year; let him now bring them to order, fixing them to the Wall. Every thing he does in this Way now will be so much Trouble saved next Pruning-time; and the Branches being thus train'd, will grow in due Form the more readily.

In doing this, Care must be taken not to disturb the Fruit, nor even to hurt the Leaves; for the Gardener understands from what we have before said, that the Fruit will not ripen without them. They serve the needful Purpose of shading them; and they also draw Nourishment to that Part where they grow.

We have directed the thinning of Fruit to be finish'd the last Week: therefore there are now no more on the Trees than they are able to support, and ripen in Perfection: let the Gardener employ his Care to preserve these. Snails will be dangerous now they are green; and a Multitude of lesser, as well as larger Devourers, will attack them when they are ripe.

Every Morning and Evening, and after every warm Shower, let him look after the first; and by timely cleaning out the Holes and Crevices in the Walls, and destroying Ants and the like wherever he perceives them, let him so far as can be done, prevent the Encrease of the others.

This is a Season in which Weeds shoot up freely, about the Stems of Fruit Trees, as well as in other Places; and if suffer'd to grow they will do more Mischief than at almost any other Time.

The thinning of the Fruit, and this rubbing off the foreright Shoots, will have brought the Gardener's Feet often upon the Border where the Trees stand, and this will have harden'd the Earth about them.

In this Condition of the Ground, nothing can be so serviceable as good Digging up with a three-prong'd Fork, such as we have directed him always to keep for this Purpose. This will at once destroy the Weeds, and loosen the Ground.

Let the Borders be raked after this Digging to take off the Weeds; and if the Trees require more Assistance, let some of the light and rich Composts be used, spreading this Mixture an Inch thick all over the Border. The Rains that follow will wash in the Virtue of these Ingredients: or if the Season be dry, there must be some good Waterings allow'd for the same Purpose; and thus the Fruit will have Plenty of Nourishment, and that of the richest Kind.

If this thin Coat of Compost be left exposed to the Sun in a dry Season, all its fine Parts will be exhaled, and it will answer no good Purpose; but if it be water'd either by the Hand, or by Showers, all the Virtue is carry'd directly down to the Roots, the Earth about them having been broke by the Digging.

Thus the Fruit being reduced to a proper Number, and the Tree well supply'd with Nourishment just as it is growing to Bigness, there will be every Thing that can conspire to bring it to Perfection.

The Espaliers of every Kind must be treated in the same Manner as the Wall Trees; and when the ill-growing Shoots are rub'd off, and those which are wanted, and which rise in proper Places, duly train'd, the same Operation of digging, clearing, and enriching the Border is to be used.

Beside the more common Trees planted for Espaliers, the Quince, the Medlar, and the Fig, will all very well answer that kind of Growth; and they will give a very pleasing Variety; one hardly knows a prettier Sight than a Medlar Espalier in Flower, or a Quince one in Fruit. The Fig is more for Singularity than Beauty, but it is far from unpleasing.

Another Tree not so common as it ought to be in Espaliers, this is the Mulberry. It is every Way preferable to the common Way of planting that Tree. The Fruit ripens better on the Espalier Tree than on those tall Standards in common Use; and it is not so liable to be shook off by the Wind.

The only Caution particularly needful in this Instance is, that the Border be made wider than for other Trees; partly because the Mulberry shoots more Fibres near the Stem than other Trees do, and partly because the Fruit, when ripe, would damage the Cloaths of those who passed along the Walks, if not kept at some more than usual Distance.

The Method of Pruning must be this: let the Trees be train'd up with a single Stem, and let Horizontals be suffer'd to stand on this about sixteen Inches asunder.

Let the Gardener understand the Reason: the Branches which proceed from a strong Horizontal will not bear Fruit the first Year.

The Mulberry most frequently produces its Fruit from Buds near the Ends of those Branches which grew from the Horizontals the Year before.

As neither the Buds of strong Branches, nor those at the lower End of a Branch produce Shoots that will bear, the collateral Branches must not

May. not be shorten'd. If the Horizontals were suffer'd to stand nearer than sixteen Inches, the bearing Branches would too much shade one another. Eighteen Inches is usually allow'd, but this is more than needful. Variety of Soils will make some Difference, but the Medium is about sixteen Inches.

When the Bearers have grown to fifteen Inches, they should be shorten'd: on this several Shoots will be made from them; and those toward the lower Part should be sav'd. New Shoots from

the Stem should also be encourag'd for Horizontals, where requir'd.

By this Manner of Pruning, the Mulberry will make a very agreeable and profitable Espalier.

The Quince will require a Management somewhat different from this, its Horizontals, with all the Gardener's Art, will be short; therefore let it be rais'd with a double Stem. Then let the Horizontals be train'd in larger Number; a Foot asunder is a good Proportion; and for the rest, the Pruning is to be the same as just directed.

May.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

IF the Gardener has follow'd our Instructions, his Care in this Part of the Work will now be more for the Assistance of his Crops upon the Ground, than in providing others.

Weeds rise no where so plentiful as in a Kitchen-Garden, and they are at no Time of the Year so troublesome as now, nor so mischievous. Let them be every where destroy'd by Hand, by the Hoe, or by the Spade, according to the Condition of the several Crops among which they have got Footing.

They are strong at this Season, and the Crops but weak: they will therefore soon over-power and starve them. It is the Season also when a great many of them ripen their Seeds; and if not destroy'd now they will lay the Foundation of a great deal of Trouble.

The Seeds of many of them will ripen as they lie upon the Ground, and by Means of the Down annex'd to them, will be carry'd all about the Garden. Let Care be taken to prevent this.

When the Crops are clean'd in this Manner, if the Season prove dry it will be a great Refreshment to them to have a moderate Watering.

Every thing being thus put into a good Condition of Growing, let what new Crops are requir'd be put in upon the Pieces of Ground, clear'd from the early Growths, and enrich'd by some good old Dung well dug in.

Upon a Piece of Ground thus prepar'd, sow some Brocoli Seed for a second Crop. Scatter the Seed thicker this Time than in the earliest Sowings; for it does not come up so certainly.

As soon as the young Plants appear let them be

refresh'd by gentle Waterings; and when they are of Growth enough to shew which are the stronger, and which the weaker, let a careful Hand be employ'd to weed the Bed, and to thin the Plants where they have risen too close: taking up the weakest.

Dig another Piece of the like Ground very well, and plant some French Beans. Watch them at their first coming up, and take Care to destroy Slugs and other Vermin about them. Give them at Times gentle Waterings; and when they are thus set well to growing, they will be soon out of Danger.

Lay out another Piece of Ground for blanching of Celeri. Let this be very well and very deep dug up; and mark out the Lines for Trenches, at a Yard asunder. Dig these with particular Care, break the Earth small, and then bring in the Plants from their Bed.

Set them five Inches asunder, and lay in the Mould well about them. They will grow in a very favourable Manner, because of the great Space of vacant Ground between the Rows; for the Roots of Celeri send out extremely long, tho' very slender, horizontal Fibres: and they will thus be very easily earth'd up from Time to Time, because there will be Plenty of good Mould, and free Room for the Spade to work between them.

Every Time the Earth is broke for the drawing it up about their rising Stalks, the Plants will shew new Vigour; and they will rise to a greater Degree of Excellence, than in the artless Manner we see too often us'd of close Planting.

E D E N :

A

COMPLEAT BODY OF GARDENING.

NUMBER XXXVIII.

For the Beginning of *June*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Curious Plants and Flowers now in their Perfection.

I. EUROPEAN TROLLIUS.

June.

Pl. 38.
Fig. 1.

THE Gardener is not unacquainted with this Plant, nor will mistake its Figure, tho' accusom'd to call it by a different Name. It has long been a Favourite among the Plants, preserved for their Singularity; nor do many who raise it in their Borders, know that it is a wild Plant of our own Country.

This shews how little Trouble is needed for its Management; and no one who ever saw the Flower, will dispute that it deserves the Place it has so long maintain'd among the cultivated Plants.

Few of the Writers on Botany have omitted to describe it, tho' most of them have been misled by its Resemblance to the Crowfoot Kind, to call it by that Name: from the Form of the Leaves, and the Size and Colour of the Flower, they were led to rank it among these Plants; and from its spherical Shape, they added the Distinction *globose*.

They have named it *Ranunculus globosus*, *Ranunculus flore globoso*; and *Ranunculus aconiti folio montanus*: from its Place of Growth, and Form of the Leaves.

From its most usual *Latin* Name the *English* Gardeners call it *Globe Crowfoot*; some by an antiquated Provincial Term, *Löcker Gowdons*; and some, the *Globe Flower*. This last is greatly pre-

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ferable, because it does not refer the Plant to any other Genus, or create Confusion.

LINNÆUS, from the different Structure of the Female Parts of the Flower, the Seed Vessels, and its want of other essential Characters of the Crowfoot, separated it from that Kind; in his earlier Works, the *flora Suecica* and *Cliffort Garden*, he refer'd it to the Hellebore; but in his latest Pieces he has allow'd it a peculiar Genus:

For this he has adopted one of the old *Latin* Names of the Plant *Trollius*; and in Distinction from an *Asiatic* Kind, he adds to the Title of this *European* one, *Corollis conniventibus nectariis longitudine staminum*: shut-flower'd Trollius, with the Nectaria of the Length of the Threads. This is a perfect Distinction; for in the other the Flower expands, and those Glands are as long as the Petals.

The Root is composed of a Multitude of long black Fibres, connected to a short and small Head.

The Leaves that rise from this have long green Footstalks, and are of a rounded Form, cut down to the Base into five principal Parts; and then again divided into other deep Segments, all sharp pointed, and deeply notch'd at the Edges: this Form, and the Support of a

June:

June. long Stalk, gives them a great deal of Beauty; and their Colour is a deep and fine green.

The Stalk rises in the Midst of these, and is round, tolerably firm, but hollow, and of a pale green; it rises to two Foot in Height.

The Leaves on this perfectly resemble those from the Root, but that they have no Footstalk.

The Flower is large, and extremely singular and beautiful. It is large, of a perfect Gold yellow, and composed of numerous Petals, which all turn inwards; so that the Shape is spherical: at first it is absolutely clos'd at the Top, but as it ripens more, there appears a little Opening in the Middle disclosing numerous golden Buttons.

This appears at a transient View; but on the Student's nearer Attention, there will be found a great deal more of Singularity as well as Beauty.

The Flower is fix'd naked on its Footstalk. The Number of its Petals is naturally ten, but this Culture often makes it exceed, and in the wild Plant I have sometimes counted twelve or fourteen. Five of these always stand in a particular Series innermost, and they bend in the most.

The others are placed in different Series, two or more: all are broad and obtuse. Within are placed nine Nectaria; these are slender, all the Way of equal Breadth; flattened, bent inwards, umbilicated, and mark'd near the Base on the Inside with a Perforation: they are nearly of the Length of the Threads, and are most distinctly seen in a newly open'd Flower.

In the Centre are placed numerous fine Threads, with upright Buttons, and in the Midst of this Cluster stand many oblong Rudiments of Seed-vessels. These have no Footstalks, they are of a columnar Form, and are terminated by pointed Tops without any intermediate Style. These Rudiments are shorter than the Threads, and they ripen into so many longish, oval Capsules, with crooked pointed Tops; each containing a round, shining Seed.

The Number of these Filaments, and their Adherence to the Receptacle of the Flower, not to the Petals, shews the Plant one of the *Poly-*

andria: and the numerous Tops or Stigmata; for there are no Styles, declare it one of the *Polygynia*. June.

Culture of this TROLLIUS.

The Plant is a Native of all the cooler Parts of Europe. We have it wild in the Northern Counties; and in *Wales* also it is very common. It is most frequently found on damp Ground, on the Sides of Hills, and where there is some Shade. This shews what we should attempt in its Culture.

A Soil of the same Kind with that a Plant has wild, only richer, is generally the true Method of raising it in a Garden; and such a Situation should be chosen as it has in Nature. Therefore let the Gardener mix for his Compost for this, a Bushel of Meadow Earth, three Pecks of Pond Mould, and one Peck of Cow Dung well rotted.

Let him chuse a rising Part of the Ground where there is some Shade; and taking away the Mould, fill the Place with this Compost. The Plant flowers in *May*, and the Seeds will naturally ripen in *July*.

Let him favour their ripening by clearing away the Ground about a thriving Plant; and often breaking the Surface, and watering it.

When the Heads are ripe let him lay them to dry on a Shelf; and after the Seeds have been shaken out of them, and harden'd a few Days, let them be sown pretty thick upon this Bed, and cover'd a Quarter of an Inch with sifted Mould.

Let a few Hawthorn Bushes be thrown upon the Ground, and thus leave them to Nature.

When the young Plants come up they must be weeded and watered; the finest of them must be left standing at a Foot Distance, and thus they will flower in their full Perfection.

Once in two Years the Earth should be removed, in Autumn; and the Roots when large, parted; thus there will be a Supply of new Plants, and the Flowers will always be large, and bright in Colour. The Petals will in some be very numerous, but these are not the most beautiful.

2. THE FLAMING TULIP.

Pl 38.
Fig. 2.

This is a Tulip much esteem'd in *Holland*, and worthy of all the Regard they shew it. Beside the elegant Singularity of its Colouring, the Time of the flowering gives it a particular Merit, for it comes in after the Generality have lost their Beauty; and should for that Reason be planted in a separate Bed, or with the two or three other late Kinds, not among the Generality of the others.

Few People look into a Bed of Tulips for a Flower or two after the rest are faded; and for that Reason this has been much less known, or

regarded than it deserves; for it does not come into full Bloom till the general Flowering is over.

It is one of the many Varieties produced by Culture from the common oriental Tulip; and is to be treated, in general, like the others.

The Root is large, and cover'd with a blackish Skin.

The Leaves are very broad, of a greyish green, waved at the Edges, of a firm Substance and hollow.

The Stalk is thick and upright, a Foot high, and

June. and of a pale Colour. There are two or three Leaves on it, like those from the Root, and at the Top a single Flower: this is of the larger Size among the Tulips, and inferior to few in the Beauty and Singularity of the Colouring.

The Ground Colour is a pure snowy White, neither tending at all to the yellow or the grey Cast. The Variegations are Red and Yellow; they make a great Shew upon the white Ground: and there are in the best Flowers several Gradations between the two Colours, such as

Flame Colour, Orange, and Saffron, beside the perfect Red and the pure Yellow. In general, the Red lies in broad and deep Veins down the Petals; and the Yellow forms a kind of Embroidery on the Edge.

The Culture of this has nothing particular: it is rais'd from Seed among other Varieties; and when obtain'd that Way, must be propagated by Off-sets.

The whole Management should be what we have directed for the Tulips in a preceding Number.

June.

3. The PEARL and PURPLE TULIP.

Pl. 38. This is a very elegant Flower, tho' not one of those form'd to strike the distant Eye with its Beauty. The Colours are only two, and these so finely blended, that it requires a near Inspection to trace them fully.

It is a Variety of the common Oriental Tulip, and flowers with the preceding.

The Root is small, oblong, and cover'd with a Chesnut-colour'd Skin.

The Leaves are broad and short, of a blue Green, hollow, obtuse, and not much wav'd at the Edges.

The Stalk is weak and slender: it is usually near a Foot in Length; but, unless supported, does not carry the Flower erect.

There are two or three Leaves on it altogether like those from the Root. At the Top stands one elegant Flower.

The Petals are six, as in other Tulips; and they naturally throw themselves open.

The Colours of these are two; a very delicate pearly White, and a fine Purple: the White is the Ground Colour; and the Purple is laid on in oblique Streaks, from the Central Part of each Petal to the Edge; and in some wav'd Lines at

the Top. These are small like Threads, in the most perfect State of the Flower, and lie so near one another, that, at a very little Distance, the Distinction is lost between them and the white Spaces; and they give a universal Glow of Purple to the Flower.

The internal Parts are the same in Number, Form, and Disposition, as in the other Tulips, and shew it one of the *Hexandria Monogynia*.

The Culture in nothing differs from that of the others, which we have deliver'd at large in a preceding Number.

Among the Tulips which break from good Seedlings, this will be found; and it is afterwards to be propagated by Off-sets.

The natural late Time of its Flowering, is a pleasing Singularity; and it may be somewhat farther put back by late Planting; but if too far thrown into Summer, it will not flower so well, or last any Time. A Place less expos'd to the Sun should be chosen for these late Tulips, and they should be planted together. They will require frequent Waterings toward the Time of Flowering.

4. YELLOW MOLY.

Pl. 38. The Gardener must be told that *Moly* is no distinct Genus of Plants, but properly a kind of Garlick: as the Name is old, and long receiv'd, we avoid perplexing him at setting out, with another.

This Kind has long been well known in our Gardens, and all the common Writers have describ'd it. They call it *Moly latifolium*, *Moly flavum*, and *Moly latifolium luteum odore allii*: Broad-leav'd *Moly*, yellow *Moly*, and broad-leav'd yellow *Moly*, with the Garlick Scent.

LINNÆUS seeing the Characters the same, ranks it with the other Garlicks, and calls it *Allium scapo nudo subcylindrico, foliis lanceolatis sessilibus umbella fastigiata*: Garlick, with a fastigiated Umbel, a naked nearly cylindrick Stalk, and lanceo-

late Leaves without Footstalks. A long Name, but needful, because of the numerous Species.

The Root is roundish, white, and juicy: often it is double.

The first Leaf from the young Plant is single; when it is to flower there rise two: these surround and enclose one another at the Bases, and are of a fine strong Green. They are ten Inches long, and of a firm Substance: they raise themselves from the Ground; and are small at the Base, largest toward the Middle, and again small to the Point: they are a little hollow'd; and, when bruised, they have the Garlick Smell.

The Stalk rises between them, and is naked, firm, though slender, and fourteen Inches high. There is no Leaf on this; but at its Top stands a large

June. a large Cluster of gold yellow Flowers, supported singly on long Footstalks. They form a kind of Umbel; and the Footstalks are so equal in Length, that the Flowers stand in the same Level: not rounded, as in most of the Umbelliferous Plants, or depress'd in the Middle, as in some of them, but flat. This is the Form LINNÆUS expresses by the Term *fastigiata*.

The whole Tuft makes a specious Appearance. All the Footstalks rise from one common Point at the Head of the Stalk, and are at first enclos'd in a rounded Scabbard; but this soon bursts and fades.

Each Flower is plac'd naked on its particular Stalk, and is compos'd of six oblong, narrow Petals, which stand hollow and erect.

In their Centre rise six Filaments, equal to the Petals in Length, and smaller from the Bottom to the Top, terminated with oblong upright Buttons. In the Midst of these is plac'd the Rudiment of the succeeding Seed-vessel, which is roundish, but mark'd with three slight Ridges, from which rises a single Style, crown'd with an acute Head. The Seed-vessel ripens in a short three-parted Form, with three Valves, three Cells, and numerous rounded Seeds.

The six Filaments shew it one of the *Hexandria* of LINNÆUS, his sixth Class; and the single Style marks it as one of the first Section under that Head.

Culture of this ALLIUM.

The Plant is a Native of the Mountainous Parts of *Europe*, the *Alps* and *Pyreneans*, and is very common by the Sides of Hills in *Hungary*. It thrives best where there is a rich Soil with some Shade and Moisture.

In Gardens 'tis hardy, and easily kept alive; the Gardener therefore allows it little Care or Attention; but he may raise it to a very superior Degree of Excellence by better Management. His common Way is to procure Off-sets; and he plants these not where they will thrive best, but where he sees a Vacancy in a Border.

Let him chuse the Spot, adapt the Soil, and raise the Plant from Seed; and he will see Flowers very different from those the common Gardener raises, according to his common Guide's Direction.

Mix up a Compost in this Manner:

A Barrow of rich Meadow-Earth, the same Quantity of River-Mud, a Bushel of Wood-Pile Earth, and five Pecks of Sand.

Mark some good Plants when in Flower, as they now are, and keep the Ground clear and well water'd about them: tie up the Stems to Sticks; and when the Seed-vessel is ripen'd, and ready to split, cut off the Head, and lay it on a Shelf in an airy Room.

The Compost will be by that Time ready: if mix'd up in *June*, and two or three Times turn'd, it will in *September* be fit for Use.

Take out the Mould in a shaded Part of the Nursery; put in this Compost, and scatter on the Seeds.

June. Cover them a Quarter of an Inch; and throw a Piece of Hawthorn over the Place. Let this Piece be weeded and water'd from Time to Time.

When the young Plants appear, let them be thin'd; and when their Leaf decays, sift over them half an Inch of the same Compost.

When they flower, mark the finest; and in the third Week of *August* prepare a Piece of Ground for them in the Garden. Let the same Compost be us'd. Level the Surface, place the Roots regularly at a Foot Distance, and cover them three Inches. The next Year about this Time they will flower in full Perfection.

After this, every Year let them be taken up in *August*, and the Off-sets taken off. Let fresh Compost be us'd, and let them be planted as at first.

It has been by this Method I rais'd those Plants of *Moly*, which appear'd to Gardeners a new Species; so much superior to the Plant in its usual State. If the curious Reader will compare the Method of Management with that given by the common Writers, he will not be at a Loss for the Reason.

The Word *Moly* (for it is a *Greek* Name) occurring frequently in the Writings of the Antients, the Curious have been at Pains to find to what Plant it truly belong'd. They do these Writers a great deal of Honour: many of them knew too little Botany to understand themselves; and hence the vain Toil of their Commentators.

Some very reverend Names among them, by *Moly*, mean *Harmala*, wild Rue; a Plant as different from the Garlick Kind, as any two that can be imagin'd.

HOMER, who talks of *Moly* as an Herb shewn by the Gods to Mankind for its Virtues, gives no farther Description of it, than that the Root is black, and the Flower white:

ρίζαν μεν μελαν εσκε γαλακχι δε ειμελον ανθος.

So much also OVID knew of it, and transcrib'd faithfully;

— *Florem dederat Cyllenius album*

— *nigra radice rotentum.*

and this the great Men, who undertook to explain their Works, and from them all Antiquity, apply'd to the wild Rue.

Doubtless, a Plant with a black Root and white Flowers, if the Description go no farther, may find many Names: but THEOPHRASTUS, the Father of Natural History, better describes the Plant: he says it had a Root like an Onion, but black, and Leaves of the Squill.

This probably was the Plant meant by HOMER, for THEOPHRASTUS liv'd nearest his Time; and this refers to the white flower'd *Moly*, a Plant, as this yellow, of the Garlick Kind, whose Root is on the Outside black; less elegant than this golden flower'd Species, tho' more celebrated of Antiquity.

As some confounded the *Harmala*, and *Moly*, others have perplex'd themselves between the common Yellow Kind, and the true White. They

June. are Natives of different Countries; this of *Europe*, that of the warmer *Asia*.

To that Plant, not amiss, belongs the Culture our Gardeners give to *Moly*; for being a Native

of light and barren Sands, in open Exposures, it bears, with us, a loose poor Earth, and an unshaded Border; but 'tis otherwise in Respect of this, native of damp and shadowy Places.

June.

5. ALTERNATE - FLOWERED GLADIOLUS.

Pl. 38. We propose here to the Gardener's Care, a
Fig. 5. Plant well known, but not always well manag'd; whose Flowers give it a Right to a Place in every Garden; and afford the Gardener an Opportunity of very advantageously shewing his superior Skill in filling the Colour, and enlarging their Body.

He is us'd to understand the *Gladiole* or Corn-flag, as of two Kinds; the one with the Flowers all on one Side the Stalk, the other with them dispos'd alternately on both: these are not distinct Species, but Varieties of the same Stock. Both may be rais'd from Seeds of the same Plant; and he may unite their Excellencies.

In the common Course of Things, the Flowers are fewer and larger in those Plants where they hang all on one Side, and more numerous, but smaller where they are on both. Commonly, also, the Colour in this last Case is inferior.

We shall shew him by what Method he may encrease the Number of Flowers, without diminishing the Lustre; and throw them on both Sides the Stalk, while they are as large as usually seen on one.

The Plant has been a great while familiar in our Gardens, and is describ'd by all the common Authors: they led the Gardener into his Mistake, of supposing the two Varieties we have nam'd to be distinct Species; and *TOURNEFORT*, their Oracle's Oracle, has indeed, in most Cases, been the Cause.

Authors in general have describ'd it under the proper Name *Gladiolus*; some have call'd it *Xiphion*. The Epithets of Distinction have been generally taken from its Place of Growth; *Narbonensis* and *Italicus*, the *Italian* or the *Narbon Gladiole*; and those who distinguish the Varieties as Species, have nam'd them, from the Disposition of the Flowers, *uno versu*, and *binis ordinibus*: *Gladiole*, with the Flowers hanging one Way, and *Gladiole* with two Series of Flowers.

The *English* Name is *Corn-flag*, but 'tis little us'd; our Gardeners have been taught *Latin* Terms, and 'tis to their Credit they endeavour to remember them.

LINNÆUS, who justly considers the Plant as the same in both these States, names it, without Reference to that Disposition, *Gladiolus foliis ensiformibus floribus distantibus*: Sword-leav'd *Gladiole* with distant Flowers. This is the Distinction from those Kinds in which they hang over one another close, and in the Manner of Scales.

The Root is roundish, small, cover'd with many Skins, and hung from the Base with Fibres.

Nº 38.

The Leaves are narrow, long, sharp-pointed, and of a fine fresh Green.

The Stalk rises amidst these, and is surrounded and enclos'd by them at the Bases. It is smooth, round, of a pale green, tolerably erect, and two Foot high.

The Top is decorated with a fine long Spike of Flowers, large, and of a very glowing Crimson. These have no Cup, but in the Place of one a few vague light scaly Scabbards.

The Flower is large, and compos'd of six oblong Petals, united at their Bases; so that if the Student pleases, he may call them Segments of one Petal; the Part where they unite is tubular and crooked.

The Petals or Segments are obtuse at the End: three of them, plac'd upwards, stand near to one another, and are convergent; the three others are more distinct from these, and from one another.

On separating the Petals, there will be found three Filaments, crown'd with oblong Buttons. They rise alternately between the Segments of the Flower, and throw themselves upwards among the three convergent and superior Petals.

Below the Receptacle of the Flower is plac'd a Rudiment of the Seed; this gives Rise to a simple Style, as long as the Filaments, and crown'd with a three-parted Head.

The Class of the Plant is seen familiarly in the three Filaments: they refer it to the third in the *LINNÆAN* System, the *Triandria*; and the single Style shews it one of the *Monogynia*.

The Seed-vessel is swollen, oblong, obtuse, and mark'd with three Ridges: it has three Valves and three Cells, with numerous roundish hooded Seeds.

Culture of this GLADIOLE.

The Plant is a Native of the Southern Parts of *Europe*, where it is found most flourishing in a light rich Soil, not wholly expos'd to the Noon Sun.

This is the Gardener's Rule for its Culture:

Let him chuse a Spot that has the Morning Rays; that is defended from the North Wind, and shelter'd from the South Sun; and there lay in a light rich Compost; in this the Plants are to be rais'd from Seed, and in this they must flower: only letting it be chang'd for fresh of the same Kind every other Year.

The common Method of propagating them is by parting the Roots; but 'tis not thus we direct our Pupil to manage Flowers.

5 Y

In

June.

In those Kinds which are mere Varieties, and not certain to be produc'd alike from Seed; and in those double Flowers which ripen no Seed of their own, he must have Recourse to this Method by Off-sets; tho' beside that we shall always advise repeated Sowings: in these which rise with Certainty from Seeds, in the expected Form and Colouring, we advise him to take off the Off-sets at Times, because, like Suckers round a Flowering-Shrub, they exhaust the Nourishment, and the Flowers are rendered weaker: but 'tis not to plant again that we would have him take them away: the Method by Seed is easy, and on this alone we would have him depend for a Succession.

Let him mark some Plants for Seed; selecting such as have a firm Stalk and large Flowers; no Matter for their Number or Disposition. Let the Ripening of these be promoted by all possible Assistance: let no Plant stand near them; let the Mould be often broke about the Root, and sometimes water'd; and let the Stalk be ty'd up to a firm Stake, to prevent the bad Effects of the Wind.

When the Seed-vessels are full grown and well harden'd, let the Head be cut off, and laid on a paper'd Shelf. A Week after this let the Seeds be shook out; and after ten Days lying upon the same Shelf, they will be perfectly harden'd and fit for Sowing.

It will by this Time be the right Season for sowing them.

Let a Part of the Nursery be chosen that is shelter'd from the North Wind, and from the Noon-day Sun. Let the Mould be taken out, and a small Bed fill'd up with any one of the light rich Composts. On this sow the Seeds, in the latter End of *September*, and cover them a Finger's Breadth with the same Compost.

Let the Bed have the common Care of Weeding, Watering, and Defence from Injuries; and the Plants will appear and take their Growth favourably.

In the Autumn following, let another Bed, larger than the first, be prepar'd with the same Compost, and the Roots taken up and planted in this, at five Inches Distance. Here they are to stand till they flower, keeping the Bed weeded and water'd as necessary.

When they flower, let the Gardener mark four or five of the finest, that is, of such as have the straightest Stalks, and the largest Flowers.

When the Season of Flowering is past, let all the rest be taken up and clean'd, and laid on a

Mat in an airy Room to harden; and in the *October* following, let them be planted out in the common Way, in the Borders; to take their Chance among other Flowers.

Let those Roots which were mark'd for Seed remain in the Bed; cut down their Stems after the Flowering is over, and sift upon the Bed half an Inch of Mould.

Keep all clear; and in Spring dig up the Bed, observing not to come too near the Roots. Place a Stick by each, in Time, as tall as the Flower is likely to rise, and from Time to Time tie up the Stalk. Let all possible Care be taken of the Plants; for this Year they are to stand for Seed.

Let this be ripen'd with the same Care, and sav'd in the same Manner as we directed the former Year; and in the Beginning of *September* let a Bed be made up for the Reception of it.

This, with the same Management directed for the other, will produce the finest Flowers the Plant is capable of shewing. They will be numerous, large, and gloriously colour'd; and they will stand in many of the Plants in the double Series, so much esteem'd; that is, in an alternate Order on the two Sides of a wav'd and curl'd Stalk.

These should be mark'd when in Flower; and when, the *July* or *August* following, the Roots are taken up, they should be kept separate; and planted together in a different Bed from that which has the others, tho' they will in their Kind be no less handsome.

This is a Proceeding that takes up six or seven Years: it will therefore, to Persons unacquainted with these Things, seem a difficult and tedious Process; but to those us'd to the Care of a Garden and Nursery, it is known well enough that there is little in these Things: one Bed of Seedlings takes its Time and Chance among the others; and there is no particular Trouble in dressing and managing it, in common with the rest of the Ground.

After a Stock of fine Flowers is thus obtain'd, they may be propagated, if the Gardener please, by Off-sets; but 'tis best to keep Seed-Beds always growing; saving from Time to Time the Seeds of the finest Plants for that Purpose.

He who has not manag'd the *Gladiolus* this Way, or seen it where it has been manag'd so, does not know to what Perfection it is possible to raise it.

6. GREAT CRIMSON PIONY.

Pl. 38.
Fig. 6.

There is not a Flower more known than this in the *English* Gardens, and scarce one so specious. It is too common to be much regarded: but this is a false Taste: if new brought from *America*, the whole Botanic World would resound with its Praise.

Few of the Writers on Plants, or Flowers, have failed to name the *Piony*, its Lustre and its Virtues recommending it. They have, in general also, called it by the same Name *Pæonia*; and this particular Kind they call the Double and the Female Piony. They describe a Male Piony, a Dwarf Piony, and some others; all which LINNÆUS refers to one original Plant, calling it without Addition, *Pæonia*, the Piony.

He thinks the whole Differences whence these have been named by others, to be no more than Variety from the Accidents of Soil and Culture.

The rest have called this Kind, *Pæonia flore rubro pleno*, *flore pleno rubro majore*, and *Pæonia femina multiplex*.

The Root is long and tuberous, brown on the outside, pale within, and of an unpleasing Taste.

The Leaves are large; and irregularly divided into a Multitude of Parts, which are oblong, uncut at the Edges, obtuse, and of a firm Substance; of a full green on the Upper-side, and pale underneath. The main Footstalks are of a pale green; and the Branches which support the Divisions, are often ting'd with red.

The Stalk is round, green, thick, irregularly divided, and two Foot and a half high. The Leaves on this resemble those from the Root, but that they have fewer Divisions.

Their Flowers are numerous and extremely beautiful. Their first Appearance is in a vast oval Bud, of a deep crimson Colour, placed in a small Cup form'd of five unequal Leaves; which are rounded, hollow'd, and naturally turn back at the Top and Sides; this Cup remains with the Fruit.

The Bud by degrees opening several Ways, discloses itself in form of a vast specious double Flower, composed of innumerable Petals, all large, and all deeply and finely stain'd with crimson; but of various Size and Shape.

The outer Petals, or those which rise immediately within the Cup, are large and rounded. These are naturally five; they constitute the Flower when single, and they are the Base of all this glorious Fullness: the rest which fill the Body of the Flower are of irregular and uncertain Form, some flatted and plain; others waved, curled, and indented at the Top; some broad and short, others longer and narrow, and some hollow at the Base, others all the Way; and not unfrequently there are some which mimic the Shape of the Leaves of the Plant.

The whole is stain'd when the Flower is in its plain perfect State, with a uniform deep crimson: but there are many Varieties in this Respect: some are pale, and some ting'd with a

deeper and paler red, and with white. There is Prettiness in these several Appearances, but the true Glory of the Flower is when the Colour is rich and simple.

To find the Class of the Plant, we must refer the Student to a single Flower. Let him examine such a one, whether Male or Female, Dwarf, or by whatever other Name it is called, and he will find the Parts alike.

The Cup and the five Petals here form the whole Flower: in its Centre rise a vast Number of slender and short Filaments, crown'd with upright, oblong, square Buttons; and in the Midst of these appear the Rudiments of the Seed-vessels. They are upright, of a greyish green, and hairy: their Number is properly two, but in this Respect Nature wantons extremely under the various Circumstances of Culture: they will be sometimes three, four, or five. There rise no Styles from those, but each is crown'd with a flatted, oblong, obtuse, colour'd Head.

The Filaments being traced to their Origin, are found to rise from the Receptacle: this makes the Plant one of the *Polyandria* of LINNÆUS: and as the natural Number of the Rudiments, with their Styles is two, it must be placed among the *Digynia*.

Culture of this PIONY.

The practical Gardener needs not be told the Piony is a Plant that needs little of his Care to raise it: but as we have said on many other Occasions, there is a Way by allowing it a little more than the common Attention, to bring it to a great deal more than the common Beauty.

It is a Native of many Parts of *Europe* and the *East*; and naturally loves a deep, light Mould, and Shelter. It is found in greatest Perfection, toward the Edges of Forests, and on the Sides of Hills near Springs. This must be the judicious Gardener's Rule for its Culture.

It will no where flower so well, or continue so long in Beauty as under shade, and where there is some Moisture. This it has from Nature, and this is a great Advantage. There are such Places in all Gardens; and few Things will grow in them: therefore let the first Care be to fix upon such a Spot. No Compost is required, only let the common Mould of the Border be well dug up two Spades Depth.

In the third Week in *August*, let some of the Off-sets be taken from the Root of a thriving Plant; and let them be large, and furnish'd with good Buds.

Plant four of these in the Bed at a Yard Distance from one another.

As soon as this is done, sow on the same Spot some Seeds saved from a fine strong Plant, with large single Flowers.

These will shoot the succeeding Spring; and may be kept upon the Bed till they are of a Growth to transplant. These should then be removed

June. moved into a like Situation and Soil in the Nursery; and kept there till they flower. Some will have double Flowers, and the finest of these should be kept to supply the Place of the old Roots.

They must be planted at the same Distance of a Yard asunder, and treated in the same Manner as the others. Common Garden Mould is to be the Soil, but it must be chang'd every Year. The Season for this is the End of *August*; and at that Time the Off-sets should be removed.

June. If this be done every Year as it ought, to keep the old Plants in their Beauty, the Off-sets will be small. They should be planted out into a Nursery Bed till they are of a due Bigness for flowering with Strength, and they must then be planted in various Parts of the Garden, observing to put them where there is some Shade.

The old Root being thus clear'd of its Off-sets annually, and refresh'd with new Mould, will continue to flower in full Glory.

7. FLESHY LATE FRITILLARY.

Pl. 38. We have told the Gardener there were yet some late Kinds of Fritillary to come under his Notice; and there is not among them a more elegant one than the present.

Fig. 7.

It is a seedling Variety from the common purple Kind, and inherits and improves all its Excellences.

The Root is moderately large, and has many Fibres.

The Leaves are of a deep green, long, narrow, obtuse, hollow'd, and of a fleshy Substance.

The Stalk is ten Inches high, purplish at the Base upwards, of a pale green, and tolerably firm.

The Leaves on this stand all alternately, and at Distances; they resemble those from the Root, but that they are smaller; and their Ends are often purplish.

One Flower hangs from the Top of the Stalk; and this is large, and of the most perfect Shape: hollow'd as a Cup, rounded at the Base; and form'd of six Petals, which stand very regularly, and turn in their Points at first, but have them perfectly strait when the Flower is full blown.

Three or four of the upper Leaves usually rise perpendicularly over the Flower, and are of a fresher green than the others; these add greatly to the Beauty of the Plant.

The Colouring of the Flower has a Delicacy and Variety that no other of the Fritillary Kind exceeds, and few can be said to equal.

The Chequering is not formally regular, but it is very pleasing.

The ground Colour of the Flower is a delicate fleshy Hue; there runs down the Middle of each Petal a broad Rib of Olive, and the Spots are of a Lemon Colour: they have something of the square Shape, that makes the Chequer-work in the other Kinds; and they are dispos'd in such a Manner as to favour it, but there is not

the Exactness as in many others.

The Characters are the same in this as in the other Fritillaries, and its Class that of the *Hexandria*, the sixth in the LINNÆAN System.

Its Culture in nothing differs from that of the other Fritillaries: this has been deliver'd at large in a preceding Number, and therefore needs not be repeated here.

It will be occasionally found among the Plants raised from Seeds of the common purple Fritillary; and whenever it is seen, should be mark'd for a particular Bed.

The Beauty of these late Fritillaries is lost when they are planted promiscuously among the others; for they do not come into flower till the rest are decay'd, and the Beds are no longer examin'd: to shew this in its Beauty, and preserve it in that Perfection for the utmost Time these frail Elegancies can last, this Method is to be observed.

Let a particular Bed be prepared for them in a Part of the Garden where the Sun does not come, except till about Ten in the Morning.

Let this be made up with the same Compost we directed for the other Fritillaries; and let this, with those other Kinds we have particularized for their late flowering, be planted in it at a Foot Distance.

Let them have less Water than the other Kinds; but let the Bed be kept constantly weeded, and the Surface be once in ten Days broke with a Trowel. This will dispose it to retain the Dews, and nothing more is required.

The Plants, with the same Management as the other Fritillaries, in all other Respects, will afford a pleasing and surprising Shew, at a Time when they have passed their Bloom: and being thus preserved from the Noon-day Sun, they will continue in flower much longer than those which in the common Way come in much earlier.



June.

June.

C H A P. II.

The Management of the Flower-Garden, for this Week.

THE Season is now come for propagating those fibrous rooted Flowers which succeed by Layers; and let the Gardener begin with his Pinks and Carnations.

The Method of raising the Carnation in its highest Perfection; and of obtaining new Flowers, is from Seed: this we shall deliver at large when we treat of some of the finest Kinds in a succeeding Number: here we give the Way of encreasing the Plants which are worthy that Care, by the much easier Method of laying.

It is the Nature of the Carnation to send out from the Head of the Root many oblique Shoots. As soon as these are long enough to bear laying, that should be done; for always the younger the Shoot the better it roots: they are in favourable Seasons fit for the Purpose about this Time; in others, a Week or two longer does the Business.

Provide for this Service a Quantity of rich Garden Mould, a Penknife with a sharp and thin Point; and several little hooked Pegs, or forked Sticks. Let every thing be in Readiness, and the Work will go on pleasantly.

Clear away any Filth that may lie about the Plant; then stir the Surface of the Mould; and lay on as much of the fresh as will raise it about three Quarters of an Inch, more or less, according to the Length and Manner of Growth in the Shoot.

The Design of this is, that the Mould may rise conveniently to the Shoots; and there may be no Violence in bringing them down: for this is often the Occasion of their slipping off; and if that be not the Case, the Juices do not flow freely where the Shoot is put too much out of its natural Direction.

This done, clean the Shoots, and prepare them one by one for laying: fix upon a strong Joint, about the middle Part of the Shoot, and with the Penknife slit it from that Joint two-thirds of the Space toward the next.

Then pull off the lower Leaves; and cut off the Tops of those at the Head of the Shoot; cut two or three gashes lightly in the Joint, below the Slit; and then open the Mould to receive the Layer. Press it down gently and gradually at the Joint, and make the Top rise as upright as may be: only in this let Patience rather be used, than Violence at once. See that the Slit be open when the Shoot is thus got into a right Position; and then fasten it down with one of the little Sticks prepared for that Purpose.

This done, cover up the Body of the Shoot with the Mould; and when all are laid that belong to one Root, in this Manner, give them a gentle Watering.

N^o 38.

Look to the Layers after this every other Day to see they all keep in their due Place; and as often as the Mould grows dry, give them a gentle Watering. See that the Mould is not wash'd off in this; and if any such Thing happen, bring on other Mould in the Place. In this Manner let them be manag'd till the last Week in *August*, and they will then be in a fit Condition for transplanting.

This being a kind of middle Season between the Spring, and the late Summer and autumnal Flowers, the Gardener should go the whole Round of his Borders with a careful Eye to take off the useless Growths, and secure the others.

The Stalks of all those Spring Plants which have done flowering, must be cut down near the Ground, and some Mould drawn up over the Stumps.

We have told the Gardener what Roots he is to take up, and preserve for planting at another Season; they are the bulbous, and some of the tuberous Kinds; we speak here of such as do not require that Management.

This done, and the Borders thus far clear'd, let him cut some Sticks of different Lengths; and take some green worsted in his Hand, and tie up the Stalks of all those Plants which are to come into flower in the succeeding Months.

Few know how much the full Beauty of these Flowers depends upon this Management. The Wind will often break off their Stalks at the Head of the Root; or at least crack and wound them there so, that they will stand awkwardly, and be irregularly supply'd afterwards with Nourishment.

In this Case, tho' the Damage itself is not seen, its Effects are very visible: the Plant does not take its regular or proper Growth; and the Flowers are poor.

When the Stalk is too strong to break in this Manner, the Effect is worse, the Root is drawn backward and forward, as the Plant rocks about; and being loosen'd in the Ground, it can afford but a poor Quantity of Nourishment to the Stem. The Leaves thus lose their Freshness, which is their great Beauty, and the Flowers are poor.

The first Frosts in Autumn also destroy the Plant; for the opening at the Foot of the Stalk by its rocking about, lets in their Influence.

All this Damage is prevented by tying up the Plants at this Season. Let the Sticks be longer than each is high at present; and let the Stalk be ty'd up in several Places.

Let some Mould after this be drawn up about the Head of the Root; and the dead Leaves, if there

June. there be any, pick'd away. Thus they will be secured for flowering well.

The Sticks must be no higher than will serve for the last tying when the Plants have their full Growth; and thus the Flowers and some Leaves rising above it, no part either of that or of the tying will be seen.

Let the Roots of such of the bulbous and tu-

berous Spring Flowers as have their Leaves now decay'd, be taken up, clean'd, and laid on a Mat to harden for putting up till the Time of planting: the decaying of the Leaves is the Gardeners Notice for doing this, and he will find that Signal now remind him of it in many of the Ranunculus's, Anemones, and Tulips.

June.



S E C T. II.

The Management of the NURSEY, for this Week.

WE have directed the sowing in *April*, the Seeds of several of the fibrous rooted perennial Plants: Wall-flowers, Fox-gloves, Sweet-williams, Hedyfarums, and many other Kinds, succeed extremely well in that Management. These will now be grown to a proper Size for transplanting.

A Piece of Ground in some Part of the Nursery, that is not too much exposed to the Noon-day Sun, must be selected for this Purpose; and divided into as many Beds as there are Kinds of Flower Plants, which want this Management.

Let Lines be drawn lengthways and across of these, at different Distances, according to the Growth and natural Bigness of the Plants, and let them be removed each into its separate Piece in a cloudy Evening.

They must be water'd carefully till they have taken good root; and then kept free from Weeds till the Beginning of *October*, which is the Time for bringing them into the Places where they are to flower.

Continue the planting Cuttings of such hardy Kinds as will succeed this way, in the open Ground.

This Week is a very good Time for planting thus the several Kinds of Lychnidea's, the Star-worts, and Double Sweet-williams.

The Ground must be well dug; the Cuttings put in with Caution, and they must be water'd at Times, and shaded from the Noon-day Sun.

A great deal of Care must be now taken of the Trees planted out in Spring; and of those yet in their Seed-beds: Heat and Drought are coming on, and they are destructive to both.

The Seedlings in their Beds must be often water'd; and if the Spot be so much open to the Sun that they flag, notwithstanding the Waterings, they must be defended by a Reed-hedge.

Frequent Waterings will be required for those which have been transplanted; and for such as are of more Growth, it will be necessary to lay some Turf, as we have before directed on other Occasions, with the Grass-side downwards all about them, and give the Waterings through it.

Several of the hardy Exotick Trees may be, with good Management, laid this Week for an Encrease. The great Caution is in the Choice of the Branches for this Purpose. If they do not take tolerable root before Winter, they will be very likely to fail; and this rooting in time will depend partly upon the Choice of young Branches; and partly in their being well cover'd, and frequently water'd.

It is an Observation that holds good throughout all these Kinds, that the youngest Shoots will strike root the most readily. Therefore let such be chosen; and as the Summer is a drying Season, let the Part that is laid in be covered deeper with Mould than usual, and often water'd.

They must be fasten'd down in their Place to promote their taking root; and in those Kinds which require most Moisture (which is declared under their particular Heads) the Place should be cover'd with some of the same kind of Turf before hand.

This Week let the careful Gardener go over all his Evergreens, with his Knife, reducing the rude Growth of Branches. Whatever Form they are intended to be raised to, their Stems must be cover'd; and this can only be done by taking off the luxuriant Growth of the young Branches.

Nature is strong in these; and when the End of a Shoot is cut off, there rise in its Place Numbers from the Sides; these cover the Body, which would be seen through every Opening of the others.

June.

June.

S E C T. III.

POMONA, or the FRUIT-GARDEN.

THIS Week let some of the Apricots that come in later than the Masculine, be inoculated; and the earliest of the Peaches. The Method we have given already, and need only caution the Gardener to be observant and careful in every little Article; for upon this the Success wholly depends.

Let him look to the new-planted Trees, which we order'd to be secur'd by Stakes, and those against Walls and Espaliers, by Nailing. If they rock about now they will soon be destroy'd, for there is no Season at which they can less bear it.

Let the new Shoots of Wall and Espalier Trees, that grow properly, be fasten'd down in different Places as they encrease in Length, and the Stakes and Tyeing be kept secure and firm in the others. Let them have a little Mould carefully drawn up about their Stems; and from Time to Time, according to the Drought of the succeeding Season, let them be water'd, and all the Caution us'd for their Safety that we have directed for those in the Nursery, which are in a like Condition.

The Berberry Bush, which has now shewn the full Beauty of its Flowers, will be set for Fruit; and this is a Time when the Gardener may, by a little Assistance, greatly improve its Bigness, Colour and Flavour. This is a Season when the Tree requires more than ordinary Nourishment; and yet, in the usual Way of Management, nothing is at this Time done.

If the Ground be over-run with Weeds, they will drain too much of the Nourishment which should go to the new Fruit; if the Trees be too close they will starve one another; and if the Season prove dry, and the Earth be hard, their Roots will be able to take in very little Juice, at a Time that they require most of all. These Accidents usually all happen; the second from an Error in the Gardener's Judgment, and the others from his Neglect.

If the Fruit be supply'd well with Nourishment at this Time, the Bunches will be full, scarce any will fail, and all will have a fine Colour and Flavour, otherwise they are too often wanting in all these Particulars.

To have fine Berberries, the Shrubs should not be planted in Wilderness Quarters, or Hedges; or too close to one another, or to any other Trees: they should have a Piece of Ground dug purposely for them; they should be planted four Yards asunder; and have all the Attention of other Fruit-Trees.

The Soil should be loamy and strong, and it should be dug up Two-spade deep before they are planted. The Shrubs should be rais'd from Layers, and these should be laid from well establish'd Trees, which bear the Fruit without Kernels. This is a great Advantage in the Berberry, and is not to be obtain'd with tolerable Certainty any Way beside.

The Layers will be fit to take up in one Year, and should then be planted in a Nursery, to stand

two more. At the End of this Time the Ground must be dug up for them, as we have directed, and the young Trees planted: and they must have the common Care of watering and defending them till rooted, which we have directed for other Trees.

After this, they will soon be in a Condition of bearing Fruit; and both in the Season of its Ripeness, and the earlier Period of their Flowering, they will afford a most pleasing Object.

In the Nursery they must be train'd up with a single and strait Stem, and the same Form must be preserv'd in this Plantation. At about a Yard from the Ground the Branches should be suffered to rise, and there may very well be allow'd about six of these in this Place. From this Part the Stem should be kept clear to fourteen Inches higher, and it should be preserv'd upright, by Means of a Stake.

At this Distance of fourteen Inches, more Branches may be suffered to grow for bearing; and the Number may be here about eight: a Foot above this the Top must be taken off, and there will so rise more Branches, six, eight, or ten of which, according to their Growth, may be suffer'd to remain on; and the straightest and most upright of them may be ty'd up to the Stake, and cut off at fourteen Inches more, for a new Supply.

In this Way the Tree may very well be carry'd up to the Height of nine Foot; and having about six Series of Branches in this Compass, it will produce a vast deal of bearing Wood, and will make a very pleasing Figure.

A Plantation of ten or a dozen of these Trees, when in Flower or Fruit, will be extremely ornamental; and the Fruit they will yield by this and the succeeding Management, will so much exceed what is commonly rais'd, that those who have not before tasted the Berberry in Perfection, will not easily believe it to be the same Thing.

There are white-fruited Berberry Bushes as well as red; and it will be very agreeable to plant about one in four of that Kind; for the Mixture of white and red will have a pleasing Effect both on the Ground and at the Table.

It will be adviseable to raise in the Nursery more Layers than are intended for this Plantation, that such as have Stones in the Fruit may be rejected. The Want of these Stones, which are the Seeds of the Tree, is a great Recommendation to the Fruit; but it is a Thing quite accidental in the Original, and therefore not certain in the new Trees.

The Berberry may be propagated by Sowing, or by Suckers, but in both those Ways the Fruit is more apt to have Kernels: this Way by Layers is vastly more like to have Success; but it is not certain in every Layer.

The Trees being thus rais'd and train'd, must be prun'd every Autumn. The Branches must not be shorten'd at their Ends, for the Fruit is produc'd in those Parts; but all that is to be done,

June. done, is to keep the whole free from dead Wood, and in proper Order.

If any two Branches cross one another, one must be cut away; any decay'd Pieces must be taken out; and no Shoots suffered about the Stem, between the Places where the bearing Branches rise.

This is the Management for Autumn, and thus the Shrubs are to remain till Spring. Then let the Gardener go over the Tree with a careful Eye, and where he sees any of the bearing Branches weak at the Ends, let him take off a small Piece: this will give Strength to the rest, and fill the Fruit.

This done thro' the whole Plantation, let him

take away all Suckers from the Roots, and rub off all Moss or other Foulness from the Trunk; then let the Ground between them be well dug up with the three-prong'd Fork, intended for the same Use in Regard to other Fruit-Trees.

Once in a Month, from that Time to the present, let the Ground be hoed; and at this Time let it have another thorough Turning with the three-prong'd Fork. After the Mould is thus loosen'd, let it have three or four good Waterings, at three Days Distance. This will fill the young Fruit; and the Sun and Air, according to the Management we have directed, passing freely between the Trees and their Branches, they will ripen favourably, and with an excellent Flavour.

June.



SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

A Crop of Cabbages and Savoy, intended for Winter Service, will now be in a Condition to transplant.

Chuse for this Purpose, an open Piece of Ground, far from Trees or Hedges, for Caterpillars breed among the Leaves of these; and the Butterflies, that produce those Devourers, frequent such Places more than open Ground. No Danger to these Plants is so great as that of the *August* Caterpillar; and this Way, by being at a Distance from Trees, they will have a double Chance to escape them.

Let the Ground be dug up a full Spade deep, and well broken; and the Plants of each Kind set at a Yard Distance. Let the Mould be clos'd about their Stems, and a moderate Watering allow'd them every Evening till they are thoroughly rooted.

The Practice of most Gardeners is to plant them much nearer than this; and to raise other Crops upon the same Ground. This is also directed by those who undertake to teach them; but it is this which spoils the Plants.

A good Soil, at the Distance we have allow'd, with no other Crop nor Weed between, is barely sufficient to fill these large Plants with their abundant and rich Juices.

Let them be set in regular Lines, at this Distance, lengthway and a-cross of the Ground; and there will so be Alleys every Way between.

Once in a Fortnight let these be dug up with a Spade, and the Mould well broken; and by that Means the Plants will have all the Nourishment so much Ground can supply; they will thus rise to their full Perfection, and the Labour will not be grudg'd.

This Week let the Gardener fill up the Alleys between the Ridges of Melons. The best Mixture I have found for this Purpose, is three Parts of strong Pasture-Earth, and one Part well rotted Cow-dung: about a Peck of coarse Sand will be proper to a Barrow of this, for the Sake of mixing the other Ingredients; and this should be laid carefully in, and well trod down. It will keep

the Plants in good Condition all the succeeding Growth.

The Cos Lettuce is now in its full Perfection, and Care should be taken to keep it so.

Let those which are in Condition for Gathering, be taken up from Time to Time, leaving Spaces, as regularly as can be done, between the others: let them be ty'd up lightly at the Top as they are preparing for Cabbaging, and the Ground hoed, every three Days, between them. Every Evening let them have some Water, but at no Time too much; and if the Bed be expos'd to the full Noon-day Sun, let a Reed-Hedge be rais'd against it, from Eleven to Three. In this Way the Cos Lettuce attains its full Perfection.

While the Table is thus from Day to Day supply'd from this Bed, let some Plants be mark'd for Seed. Let these be the largest, firmest, and finest of the whole Growth; and let a Stick be fix'd by each of these, to tie up the Stalk as it rises. Let the others be clear'd away from about these as soon as may be, after they are mark'd; and let the Ripening of their Seeds be favour'd by all possible Means; breaking the Ground round about them, and frequently watering them.

Chuse an open Spot for transplanting a good Crop of the Seedling Endive. Let it be well dug up, and the Surface levell'd, and rak'd clear from Stones. Then draw Lines upon it, at fifteen Inches asunder, and the same a contrary Way, and plant the Endive out at this Distance.

Closethe the Mould about the young Plants, for this is a dry Season, and allow two or three careful Waterings in Evenings, or more, if the Plants are not rooted by that Time.

After this, let the Ground be kept clear from Weeds, by frequent and good Hoeing; and if the Plants flag with the succeeding hot Weather, and Want of Showers, the Gardener will find it very well worth his while to water them. Once in four Days will be sufficient for this Purpose; and they will thus get Strength and a due Bigness, and will be ready for blanching to the utmost Perfection.

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COMPLEAT BODY OF GARDENING.

NUMBER XXXIX.
For the Middle of JUNE.

SECTION I.
FLORA, or the PLEASURE-GARDEN:

CHAP. I.

Curious Plants and Flowers now in their Perfection.

I. IMPERIAL MARTAGON:

June.
Pl. 39.
Fig. 1.

THIS is a very elegant and noble Plant: known from the earliest Time, and always a Favourite with those who cultivated Flowers. Its Beauty will continue to recommend it, and there is a Merit in its easy Culture.

All the Writers on Plants have nam'd it. They have call'd it in general, *Martagon*, and *Martagon latifolium*, the broad-leav'd *Martagon*. Some, after LOBEL, *Hemerocallis*; and the more Correct, *Lilium Martagon*, and *Lilium floribus reflexis*: the *Martagon Lilly*, or the Lilly with reflex Flowers.

LINNÆUS joins it to the Lilly, with whose Characters it perfectly agrees; and adds, as the Distinction of the Species, *foliis verticillatis, floribus reflexis, corollis revolutis*: Verticillate-leav'd Lilly, with the Flower turn'd down, and their Petals bending up again.

The Root is roundish, small, yellow, and form'd of numerous pointed Scales.

The Stalk is upright, firm, round, of a purplish Colour, and two Foot and a half high: toward the Top it is a little hairy, and sometimes all the Way.

The Leaves are short, broad, and of a deep green; small at the Base, and vein'd with conspicuous Ribs on the under Side. They grow in re-

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gular Clusters, at certain Distances, surrounding the Stalk in the Manner of Rays from a Star. This is call'd the verticillate Disposition. Toward the Top there stand a few loose scatter'd Leaves, which are longer and narrower than the others.

The Flowers are very beautiful, they crown the Stalk in great Numbers, and rise one above another, in a kind of pyramidal Form. They are large, and of a pale Red, spotted with a deeper, Blood-Red or Purple, in a various and irregular Manner, but very pleasing.

Each Flower has its separate Footstalk, and hangs down; but every Petal turns up again. The whole Head of these is very numerous, and their Smell a delicate and rosy Sweet.

The Flower stands naked on the Footstalk, and is form'd of six Petals, rising from a small bell-shap'd Base: they are oblong, and have thick fleshy Points; and at the Base of each there runs a longitudinal Line, which is the Nectarium of the Flower.

In the Centre rise six Filaments, on which are plac'd so many oblong incumbent Buttons; and in the Midst of these is an oblong cylindric Rudiment of a Seed-vessel, from which runs a single oblong Style, crown'd with a thick triangular Head. The Seed-vessel which follows, is oblong,

6 A

and

June:

June. and mark'd with six Furrows, and has a hollow three-corner'd Top, with the Angles obtuse: it contains three Cells, and is form'd of three Valves. The Seeds are very numerous; they lie in a double Row in each Cell, and they are flatted and rounded on the outer Part.

The six Threads and single Style very plainly declare the Place of the Plant to be among the *Hexandria Monogynia*.

Culture of this MARTAGON.

It is a Native of the Northern Parts of *Europe*, where it thrives best in a deep light Earth, about the Edges of Forests. This may give the Gardener its Rule of Culture.

No particular Care can be needful for preserving a Plant which Nature leaves to takes its Chance in *Hungary* and *Switzerland*; and there can be no more Difficulty in mixing a proper Compost.

A Bushel of Pond-Mud, two Bushels of rich Pasture-Mould, half a Bushel of Wood-Pile Earth, and a Peck of Sand, will make an excellent Soil for it. These should be mix'd in Spring, and two or three Times turn'd, between that Season and *July*; when it will be proper to plant the Off-sets from the Roots.

These are to be taken off when the Stalks are decay'd, and they must be planted immediately. Let a Part of the Garden be chosen where there is the Morning Sun and some Shade, and let the Compost be put in the Place of the common Mould. Let the Off-sets be planted at two Foot Distance, and afterwards kept clear from Weeds, and occasionally water'd.

This is the common Method of Culture, and the Gardener in the usual Course of his Business thinks of nothing more; but there is a great Advantage in raising the Plant from Seed. The Flowers will be larger, and more elegantly spotted, when all is manag'd with due Care this Way, and often there will rise Varieties beyond Thought. The Method is this:

Save the Seeds from a strong and healthy Plant, and sow them on a Bed of the same Compost, in a Part of the Seminary open to the Morning Sun, for two Hours, but shelter'd from its Rays during the rest of the Day.

The best Time for sowing them is the Middle of *August*: they must be scattered thick upon the Mould, and covered a Finger's Breadth with the same Compost sifted over them.

From this Time the Bed is to be kept clear from Weeds, and sometimes slightly water'd.

In the succeeding Spring they will shoot; and the young Plants, when they have a little Growth, must be thin'd where they have risen too close.

Let the Bed be kept clear from Weeds; and when the Leaves of the young Plants are decay'd, let them be cover'd with half an Inch of fresh Mould. June.

Thus let them be manag'd till the succeeding *August*, and then let the Mould be sifted; the Roots taken carefully out, and planted in the Garden, in a new Bed of the same Compost, a little more expos'd to the Sun, but still shaded from the full Blaze of Noon.

They should be planted in this Bed at a Foot Distance, and there manag'd as before; weeding and watering till they flower.

There will be found a great many Varieties, and the best should be mark'd while in flower. These must be preserv'd separate afterwards, and the rest planted out into common Borders. The Varieties consist in three Particulars:

1. In the Ground Colour of the Flower, which will be fleshy, Crimson, or pale Purple.

2. In the Tinct of the Spots, which will be of a deep Orange, Blood Colour, or a Violet Purple, or almost Black: and,

3. In their Distribution and Form: some will be round, others oblong; and they will throw themselves into various wild Arrangements.

Dr. MARTYN, from the Forms into which these Spots sometimes cast themselves, supposes the *Martagon* to be the famous *Hyacinth* of the old Poets, mark'd, as they say, with the Letters A E.

OVID, indeed, describes the Flower as being like a Lilly, and Red, and thus far the *Martagon* very well agrees with it: and if the Spots do indeed ever form themselves in the Flower, as they are represented in that Author's Figure, there is no Reason to doubt its being the Plant. In general, their Disposition is perfectly wild and free.

When the finest Flowers have been separated from the rest, their Roots must be taken up as soon as the Stalk is decay'd, and planted again immediately in fresh Compost of the same Kind, at two Foot Distance.

This must be done every Year; the Off-sets must be every Time carefully taken off, and the old Compost clear'd away.

The third Year of their Flowering, let Seeds be sav'd from one of the finest Plants, and these sown, and the Plants manag'd, just as directed for the first: thus there will be an Improvement upon the first; and the same Method being still pursu'd, of sowing from the finest Flowers, the *Martagon*, which was improv'd the first Time, will, by the third or fourth Process, exceed the Gardener's Imagination. One Thing I have observed singular in this Case; as the Flower is thus rendered more beautiful, the Scent grows fainter.

June.

June.

2. DOUBLE STARRY COLUMBINE.

Pl 39.
Fig. 2.

This is another of those Flowers which bear our Winters in the common Ground; and need no particular Care or Attention to preserve them: 'tis therefore valuable, as well as for its Beauty.

The Gardeners have long known it, and the Generality of those who have written on Flowers, have mention'd it. They all agree in giving it the true Name *Columbine* (so much the Form of the Plant and general Aspect of the Flower demands) altho' it does not preserve the common Character, which is the *hooked Nectaria*, from whence the Plant obtain'd its original Name.

Some of the old Writers have hence call'd it *Aquilegia degener*, the degenerate Columbine; but that is a Name too mean for so elegant a Variety. Others have more properly call'd it the Rosy or the Starry Columbine, *Aquilegia rosea*, and *Aquilegia stellaris*: others, *Aquilegia flore roseo multiplici*; and JOHN BAUHINE, most distinctly of all, *Aquilegia flore simplici & pleno non corniculato*: the single and double Columbine, without Horns to the Flower. This Term Horn, has been given to the Nectaria, and the Name therefore is expressive.

With all this Singularity of Aspect, the Plant is no more than a Creature of Accident, and the Gardener's Industry; a Variety of the common Columbine. This RAY observ'd; who found sometimes on the same Plant these Flowers, and others of the usual Form: and this LINNÆUS confirms: he refers the Plant to the common Columbine, which, in its plain and original State, he calls *Aquilegia nectariis incurvis*: the Columbine with crooked Nectaria.

The Root is large, whitish, long, and thick, divided into many Parts, hung with long Fibres, and of many Years Duration.

The Stalk is a Yard high, slight, upright, branched, reddish, and a little hairy.

The Leaves are large, but compos'd of many Parts; these are dispos'd in Three's, on branched Footstalks, and the principal of them are divided lightly into three Lobes, by Indentings. Their Colour is a faint, blueish, or greyish Green.

The Flowers are numerous, large, and beautiful: they are altogether unlike the common Columbine, from which they are derived, and have the Aspect of common double Flowers. They are compos'd of a great Number of plain oblong Petals, and these spread themselves out in a radiated or starry Form: the outer ones being largest, and those within smaller to the Centre.

Their Colour, when most perfect, is of a fine high Scarlet; but from this it varies in some Plants into a faint yet not unpleasing Red; in others, it runs thro' all the Changes of Blue, Purple, and Flesh Colour, even to absolute White; and in some Flowers there will be a very agreeable Mixture of Green.

All these Colours will be obtain'd from the Seed of one Plant, therefore they are palpably no more than seminal Varieties; and beside these, there will be from the same Seeds also great Variety of Form. This, excluding the Flowers of

the common Structure, may be reduced to three Kinds; The single Starry Columbine, the double Starry, and the Rose.

The single Starry Kind has a plain Flower, compos'd of a few flat Petals: the double Starry is that we have represented in the annexed Plate; the Petals of which are very numerous, yet plac'd in the Form of Rays, distinct from one another; and the Rose Columbine is that in which the numerous Petals form an entire round Flower without these Divisions.

Of all these Kinds, there are Red, Blue, and White. The Terms have been us'd indistinctly; but though the Names only of so many Varieties, they may be us'd thus determinately.

It would be vain for the Student to seek the Class of the Columbine in this singular State of the Plant. We have observ'd, that the Parts on which these Characters depend, are commonly obliterated in double Flowers; and they are more than usually confus'd and lost in this irregular as well as full Flower.

That he may know the Place of every Plant in the LINNÆAN System, and be able to refer all Varieties, thro' their proper Species, and Genera, to the true Class, let him always, in these Cases, refer to the usual or natural State of the Flower.

Let him take off one from the common blue Columbine, from whence this Variety is rais'd, and he will find in it enough of Singularity. It has no Cup; but 'tis compos'd of five Petals, and as many Nectaria; very singular and very conspicuous.

The Petals are oblong, plain, and equal in Size, and they are regularly spread open.

The Nectaria stand alternate with the Petals: they are long, hollow, slender, widest toward the Mouth, and shap'd like Horns.

The Mouth opens obliquely, ascending on the Outside, and adhering to the Receptacle of the inner Verge. The tubular Part is long and pendulous, and has an obtuse bent Top.

In the Centre rise a vast Number of slender Filaments, crown'd with oblong upright Buttons. The outer Filaments are shorter than the inner, and the Buttons are equal in Length to the Nectaria.

In the Midst of these are plac'd five Rudiments of Seed-vessels, of an oval Form, but oblong, and from these rise so many Styles; smallest toward the Top, and crown'd with upright simple Heads. About and between these Rudiments are plac'd ten scaly Substances, which defend them from Injuries, and separate them from one another.

The Seed-vessels after every Flower, are five: they are strait, cylindrick, pointed, and plac'd parallel, they are form'd of one Valve, and they burst inwards. In each are numerous, oval, hollow'd Seeds, fix'd to the Suture where the Seed-vessel bursts.

The Student will not wonder that in the ruder Days of the Science, those who wrote on it were strangely perplex'd about a Flower consisting of such singular, various, and irregular Parts; but he

June. he will understand them when thus explain'd; and from the Filaments and Styles will easily find the Place of the Plant in the LINNÆAN System. He will perceive that the Filaments are fix'd to the Receptacle; and from this Infertion, and their Number, that the Plant is one of the *Polyandria*; as also, from the five Styles, that it is one of the *Pentagynia*, the fifth Division under that general Head.

Culture of this COLUMBINE.

We have shewn that this and the other Kinds of double Columbine, usually seen in our Gardens, are Seedling Varieties rais'd from the common Kinds; and shall therefore give the Culture of them all together.

The Plant is Native of many Parts of *Europe*, so that it is too hardy to require any great Care in its Preservation; but from a proper Culture it will afford all these Varieties, and more; and the Gardener's Pains will be very well rewarded.

Let him make for it such a Compost as Nature directs, light, and yet rich.

Let him mix a Barrow of the finest Pasture-Mould, a Bushel of Pond-Mud, and two Pecks of rotted Cow-dung, with one Peck of River-Sand. These being well wrought together, let him chuse for the Place a Part of the Seminary which is on a rising Position, and has a good deal of Shade. The Morning and the Evening Sun will be useful, but that of Noon destructive.

Here let him dig out the Mould, and in *August* put in the Compost six Inches deep.

Let him save Seeds from some strong and well growing Plants of the common Columbine; and as they will be ripe in *July*, they will have lain a Fortnight upon his Shelf to harden by the Time we direct this Bed to be prepared for them. Let them be scattered moderately thick upon this Bed, in the Evening of a showery Day. Let him sift over them a Quarter of an Inch of dry Compost, and laying a Piece of Hawthorn Bush upon the Bed, leave them so to Nature.

In Spring the young Plants will appear. The Weeds must be carefully taken up, and the Plants thin'd where they stand too close. From this

Time they must be often weeded, and occasionally water'd. June.

When they have a Month's Growth, let him thin them again, taking up the weakest Plants: those may be planted out upon another Piece of Ground; the others remaining undisturb'd till the latter End of *September*; and being all that Time kept carefully weeded and water'd.

Let a Bed be prepar'd for them; at the End of *September*, in the Garden. Let the same Compost be us'd, but a Place chosen a little more open to the Sun, than that in the Nursery.

The Plants must be taken with Care from the Seed-Bed, and set regularly in this, at two Foot Distance. Thus they must remain thro' Winter. In Spring they must be weeded, and the Mould should be broke between them with a Trowel; and in the *June* following they will flower. There will be found among them some of the curious Sorts, and some of the common; but those of the common will be very fine in their Kinds.

As soon as the Flowers fade, let the Stalks be cut down near the Ground, and a Covering of an Inch of fresh Compost thrown upon the Bed.

The next Year they will flower stronger; and two or three of them should then be mark'd for Seed.

This should be sown in the same Manner as the first, and the Process repeated every Year. Thus by Degrees, tho' not at once, the Gardener will have all the elegant Kinds.

The fine Roots must be preserv'd with Care, and manag'd well, or they will degenerate. Every Autumn they must be taken up, and when too large, parted; and every time this is done, they must be allow'd new Compost. I have thus preserv'd the same Roots flowering in full Perfection several Years.

There is little Trouble in raising this Plant from Seed, therefore it should be constantly repeated. The Gardener who does this will have all the Varieties; and those who have not seen them all, know little of the Beauty to which this common hardy Plant is capable of being brought by proper Management.

3. VIOLET BULBOUS IRIS.

Pl. 39. This is a very elegant Plant, long known, and worthy to be always esteem'd in our Gardens. Fig. 3. The Lustre of its large Flower would recommend it to this Attention, if it requir'd more Care and Pains in the Management; but it is hardy, and demands very little Trouble.

The old Writers name it; but many of them separating it with some others which have round Roots, from the common tuberous *Iris*'s, have call'd it *Xiphium*: others, who have kept the two Kinds separate, have retain'd the common Name, *Iris*, tho' with the Addition of *bulbosa*; and have

call'd it *Iris bulbosa purpurea*, and *ceruleo violacea*: the purple, and the violet blue bulbous *Iris*.

LINNÆUS retains the Generical Name *Iris*, in common to the bulbous and the tuberous-rooted Kinds; and adds, as the Distinction of this Species, *corollis imberbibus, foliis subulato-canaliculatis, caule brevioribus*: Beardless *Iris*, with Leaves hollow'd, small to the Point, and shorter than the Stalk.

The Root is roundish, large, fleshy, and cover'd with several dark Membranes.

The Leaves are hollow'd, oblong, pointed, and of

June. of a fine green, but often irregularly spotted on the Inside.

The Stalk is juicy, low, surrounded with a few Leaves and Membranes, and naturally supports only one Flower. Sometimes from the Luxuriance of Culture two or three will burst out in Succession; but they are not so fine as when the whole Effort of Nature is for one, and all the Juices are sent to its Nourishment.

This is large, and of a deep and elegant violet blue; of the same Form with those of the common Flower-de-luce, but not bearded; and variegated with no other Colour, except a Mark of yellow toward the Extremities of the three lower Petals.

The whole Flower consists of six; and has, as the other Iris's, the Appearance of three others, so that an untaught Student would count nine. Of the six proper Petals three are placed outward, and hang downward; three inward, and stand erect; and among them appear three leafy Heads of the Style, which tho' shorter than the rest, look like Petals to an Eye not sufficiently accusom'd to the Distinctions of the Science.

The Bases of the three lower Petals are in many of the Kinds mark'd in a particular Manner by a hairy Nectarium; these are called bearded Flowers.

In the Place of those Beards there are in this on each of the Petals three Dots, which serve the same Purpose, tho' without the Ornament; and the Flower is therefore called beardless. The short Style from which the three leafy Heads rise, stands in the Midst of three Filaments, crown'd with oblong upright Buttons.

This shews the Plant to be one of the *Triandria Monogynia* of LINNÆUS, his third Class, and its first Section.

Culture of this Iris.

The Root freely produces Off-sets: by these the Gardener knows 'tis easily multiply'd, and in general his Care extends no farther: he places it in the Borders where it is wanted, not according to its natural Condition; and in Spite of this inconsiderate Treatment it flowers, and is admired; how much more will it be so when raised with due Attention.

It is a Native of *Spain*, and therefore requires, tho' not a Stove or Green-house, yet the warmest Part of our common Garden Ground; and this must not be too much open to the Sun: for in its wild State it loves shelter. The Gardener knows a Place may be warm without being Sun-burnt; such a one he is to chuse for this Iris; and if his Care proceed no farther than to the encreasing it by Off-sets, let him allow these in such a Part of the Ground a proper Compost; and not bring them thither till they have stood one Season in a Nursery Bed, after being separated from the old Roots, for the first Year they blow weakly.

The Compost is to be the same whether he content himself with this slight Culture, or raise his Stock from Seed.

Let him mix equal Parts of Meadow Earth
N^o 39.

and Pond Mud, and add about one fourth rotted June. Cow Dung; this will be a rich, and yet cool Mixture, which the Plant loves.

If he use Off-sets, let them be brought in from the Nursery soon after their Leaves are decay'd, and planted at eight Inches Distance.

Every Year after flowering let them be taken up, clean'd, and immediately planted again in fresh Compost of the same Kind; and their Off-sets separated and raised as before directed.

For the raising them from Seed let a Bed be prepared in the Nursery well shelter'd from cold Winds, and from the Noon Sun, and on this filled with the Compost just directed, let the Seeds saved from a thriving and well flowering Plant be sown in the last Week of *August*. Let them be scatter'd equally over the Surface, and a Fingers Breadth of the same Mould sifted upon them. Lay a Piece of Hawthorn on the Bed, and keep it clear from Weeds; when the Earth dries allow a little Water; but this must be given with great Care not to wash the Seeds out of the Ground.

If the Bed lie open on any part to cold Winds, plant a Reed-hedge to screen it in Winter, and in hard Frosts draw a Mat over the Bush.

Thus the Principle of Life in the Seeds will be preserved, and they will shoot according to their Nature early in Spring.

Let them be thin'd if they rise too close: let all Weeds be clear'd off as soon as they appear, and let them be allow'd moderate Waterings. In *June* the young Leaves will fade.

Clip them off, and sift on half an Inch of Mould; thus let them lie the Winter. Next Spring treat them as before; but in the End of *June* when their Leaves decay, take them up.

Let a larger Bed of the Compost be prepared in the same or some like part of the Nursery. Sift the Mould of the Seed-Bed to get the Roots; and plant them regularly as soon as separated in the new Bed at four Inches Distance. Defend them in severe Frosts; weed them in Spring, water them as there shall be Occasion, and thus raise them to flower.

Mark the finest; and when the Leaves wither, take up the Roots of those and plant them at a Foot asunder, in such a Bed as we directed for the Off-sets in the Flower Garden. After this treat them as the Roots raised from Off-sets, encreasing them the same Way.

The next Year's flowering in the Nursery Bed will shew which of the others are worthy to be mix'd with these; and they should be brought in when the Leaves wither; the Garden Bed being enlarg'd to receive them. The rest may be planted in common Places to give Variety, or to make up a Border.

Thus will many fine and gaudy Flowers be raised: but the choicest Kinds are yet to come; let the same Method be observ'd with the Seeds of some of the fairest Flowers thus raised, and this repeated occasionally with the finest Flowers from those.

Thus will be produced the most perfect Bloom
6 B of

June. of this and the other bulbous Iris's, and no way but this; nor less than the Application of several

Years can shew that Flower in the full Perfection.

June.

4. HUNGARIAN IRIS.

Pl. 39. The Student who has examin'd with us the
Fig. 4. Flower of the last mention'd Plant, will readily understand the Structure of the present; the principal Difference of which from that, beside the Colour, is that it has those bearded Nectaria wanting in the other upon the lower Petals.

Most of the Writers on Plants have named this; nor are our Gardeners unacquainted with it. They call it Many-colour'd Iris. It is one of the tuberous or common Kind, not of those called *Xiphia*, or bulbous *Iris*; and it has been named from its native Country, *Iris Pannonica*; from its Colouring, *Iris lutea variegata*; and *Iris colore multiplici*; as from the Breadth of its Leaves, *Iris latifolia*.

C. BAUHINE joins the three last Circumstances, and thence has form'd a Name copy'd by most others, broad leaved *Hungarian Iris*, with a many colour'd Flower.

These are not the Distinctions on which LINNÆUS form'd his specifick Names. In his accurate Method he conveys a Description of the Plant in its Title: this is *Iris corollis barbatis, caule subfolioso, longitudine foliorum multiflora*: bearded Iris, with the Stalk of the Length of the radical Leaves, and carrying some small Leaves and several Flowers.

The Root is thick, irregular, knotty and yellowish.

The Leaves are numerous, long, broad, sharp at the Point and Edges, and of a fresh but somewhat blueish green.

The Stalk is rounded, of a pale green; upright, but with some little Bendings, and a Foot and half high. Toward the Ground it is often purplish, as are also the Leaves, which rise with it from the Root.

There stand on this in an irregular Manner, two, three, or four slight Leaves; much smaller than those from the Root, and paler.

The Flowers are large and very beautiful, one usually terminates the Stalk; and there burst forth others without any Regularity Sideways, a little below it.

These are form'd as those of the bulbous Iris just described; they have no Cup: three Petals stand upright, three droop, and there are three broad and leafy Tops to the Head of the Style, which represent so many other smaller.

The Colouring is extremely various and uncertain, but always elegant.

The three upright Petals are of a fine Gold yellow, naturally plain, and elegant, only in the Purity of the Tinct, but sometimes vein'd with a deeper Hue: the three Petals which hang down are white, variegated with Streaks and Clouds of purple or crimson.

The bearded Part at the Base is yellow toward its Bottom, and whitish toward the End; and the three Heads of the Style are also variegated with yellow and white.

This is the usual Colouring; but in different Flowers it varies extremely. In some the three under Petals are altogether white; in others they are flesh colour'd, and in others they are crimson at the Base, from whence all the Rays proceed, which run in a regular Direction to the Tip of the same Colour. These and many other Changes rise from the Accidents of Culture; but in all the Flower is very beautiful.

The Characters of the Class are obvious as in the preceding Kind: three Filaments and a single Style declare it one of the *Triandria Monogynia* of LINNÆUS, his third Class, and its first Section.

Culture of this Iris.

The common Method of propagating this is, as in the other, by the Root: as that of the bulbous Iris produces Off-sets, this spreads out every Way in thick irregular Parts, and will bear to be, every Year or two, divided; and the separated Parts will flower, if not too small, the first Year.

This is so easy that few think of giving themselves more Trouble about it: and the Plant is so hardy, that it grows without more Care in any Soil wherein it is planted; so that it is put down at random in Borders where there is a Vacancy, without regard to its Nature, or the Condition of the Place. Even this Way it flowers beautifully, but the Gardener may be assured more Care and Attention will bring it to greater Elegance.

Every Plant has in Nature its peculiar Soil and Exposure in which it succeeds best; and these should be study'd to give it full Lustre in Gardens.

This in its Native Country before mention'd, loves a light, rich Soil, with some Moisture; and though it flourishes in a warm Air, it does best where there is least Sun. Therefore let a part of the Garden suited to this be chosen, and let the Compost be Pasture Earth and Pond Mud, each a Bushel: Wood Pile Earth, and Cow Dung, of each half a Bushel; and a Peck of Sand.

Let these be mix'd in Spring, and in the first Week of September thrown into the Place selected for the Plant.

Let the Roots be taken up and parted in a cloudy Day when there is a Probability of Showers, and immediately planted at two Foot Distance in this Bed. If there fall no Showers, they must have gentle Waterings, and they will flower unless too small, the next Year.

The Way to raise the Plant in its highest Perfection, and to procure Flowers of more than ordinary Beauty, is to sow the Seeds.

These should be gather'd from a handsome Plant, and sown in a Nursery Bed of the same Compost, managing them as in the former Kind, and when they come to flower, selecting the finest, and planting them in such a Bed in the Flower

June. Flower Garden; disposing the rest in less regarded Places.

Among these fine Flowers, which will shew a great and elegant Variety of Colouring, let the best be mark'd for Seed again, and that sown with the same Precautions.

In this Manner will be obtain'd the finest Flowers the Plant is capable of producing, and these are then to be manag'd with the same kind of Care we directed for the parted Roots.

The Place in the Garden must be shady, for the full Sun destroys their Flowers in a few Days, which naturally are much more lasting; there must be Water allow'd them frequently, from the first Shoot of the Stalk till the Time of their flowering is past.

When they are in bloom they should be shelter'd by a Reed-hedge, if the Place be open to any sharp Wind; and the first Flowers

June. must be cut off as they grow toward fading, that the others may open in full Perfection, and unless Seed be wanted let none stand to ripen any.

When Seed is required, let only the first Flower that opens be permitted to ripen; for the others would exhaust the Nourishment, and the Seeds would be less perfect. Let these be dry'd, and sown in the same Manner and at the same Season with those of the other Seed.

For the Management of the Roots nothing more is required than the allowing them fresh Compost every Year, and the parting them every other Year. This must be done in August, when the Flowerstalks are quite faded, and the Leaves look pale: they must be immediately planted again; for all that is meant by this, is to prevent their spreading to so large a Bulk as to rob one another of the due Nourishment.

5. YELLOW AND WHITE JONQUILL.

Pl. 39.
Fig. 5.

The Gardener understands by what has been said on a preceding Occasion, that the *Jonquill* is properly of the *Narcissus* Kind; and the Student in Botany will immediately discover the same Characters in the Flower. This is a very elegant and singular kind, and has been long known in our Gardens.

In the most usual State the entire Flower is white; but in the elegant Condition wherein we represent it in this Place, the Mixture of white and yellow is very pleasing.

All who have written on Flowers have named it; they call it *Narcissus juncifolius flore albo reflexo*; and in this elegant State, *Narcissus juncifolius calice luteo foliis reflexis albis*: Jonquill with a yellow Cup, and white Leaves to the Flower.

The Student knows what is meant by the Cup in this Flower, is the Nectarium, and he will easily understand the Name.

LINNÆUS joins it with the other Jonquills; and adds as their Distinction from the rest of the *Narcissus* Kind, *Spatha multiflora, nectario campanulato brevi, foliis subulatis*: Many-flower'd Narcissus, with a short bell-shap'd Nectarium, and subulated Leaves.

The Root is roundish, of the Size of a Chestnut, and cover'd with a brown Skin; with many white Fibres from the Base.

The Leaves are narrow, long, hollow'd, striated, and of a fine fresh green.

The Stalk is round, upright, of a pale green, and eight Inches high. On its Top are placed four or five Flowers of a whimsical Form, and very elegant Colouring.

They all rise from one common Point at the Head of the Stalk, and each has its separate long Footstalk: their natural Position is drooping; and they are composed of a large Nectarium or Cup, and six Petals rising from its Outside toward the Base.

The Cup is of a faint delicate yellow, and the Petals are Milk-white.

The Colouring of the Cup is various in Degree and Form, usually it is compleatly yellow; and that Colour is deeper in some Flowers, and paler in others; sometimes the Body of it is so pale that it appears whitish, and the yellow is laid on in Streaks; and these will be sometimes continued to the Petals, tho' they are naturally of a pure and perfect white.

The Flower is constructed as those of the other *Narcissi*. There is no Cup beside the common Scabhard, which serves for the whole Bunch of Flowers, and fades soon after it has burst to give them Way.

The Nectarium is of a bell-like Shape, and droops; the Petals are narrow and turn up.

Within the Nectarium rise six Filaments crown'd with oblong Buttons, which are not seen in the natural Position of the Flower, because not equal to the Nectarium in Length: and from the Rudiment of the Seed-vessel which is placed under the Receptacle of the Flower, rises a single Style longer than the Filaments, and crown'd with a three-parted hollow'd, obtuse Head.

The six Filaments refer the Plant to the *Hexandria* of LINNÆUS, that Author's sixth Class; and the single Style places it in the first Section among the *Monogynia*.

Culture of this JONQUILL.

The Plant is a Native of the southern Parts of Europe: it is found wild in moist, warm Places, where the Soil is deep and rich.

The common Garden Mould with an Addition of Wood-pile Earth, and rotted Cow Dung, I have found suit it best; about a Peck of each of these latter Ingredients should be added to a Bushel of the other: it requires natural or artificial Shade in the Heat of the Day, and in the flowering Season to be often water'd.

It may be propagated by Off-sets in the usual Manner, but the best Way is to raise it from Seed. There will always be produced by that

June. Management, a great Variety of Flowers; and if Seed be again sowed from the finest of those, the Flowers will be improved almost without End or Limitation.

June. The Method of raising it from Seed must be the same with that used for the other Narcissus's, which we have deliver'd in a preceding Number.

6. GREAT WHITE NARCISSUS.

Pl. 39.
Fig. 6.

This is a very elegant and noble Flower, hardy enough to bear the worst Seasons with us, and adorning our common Borders with a Blaze of snowy Whiteness that is very pleasing.

Those who have written on Flowers have all named it; and under the small Variations of Colouring in the Nectarium, or as they call it, the Cup, have distinguish'd many imaginary Species. They call it, *Narcissus orientalis calice pallido maximus*; and *Narcissus orientalis albus luteo calyce*: the great oriental Narcissus with a pale Cup; and with a yellow Cup.

LINNÆUS, who disregards such slight Marks in the distinctive Names of Plants, refers the several Varieties to one Kind; which from the Form of the Leaves, and Shape, Position, and Proportion of the Cup, he distinctively calls, *Narcissus foliis ensiformibus, florum nectario campanulato erecto, petalis longe brevioribus*: Sword-leav'd Narcissus, with an upright bell-shap'd Nectarium, much shorter than the Petals.

Under this Name he comprehends perhaps too many; but certainly with Justice, all those Flowers of this Form, which have no more Distinction than a slight Variation in the Colouring of the Cup.

The Root is roundish, cover'd with a brown outer Skin, and hung with many large and long white Fibres from the Base.

The Leaves are broad, eight Inches long, obtuse, and of a pale green, with a Tinge of blueish.

The Stalk is fifteen Inches high, pale and erect.

The Flowers burst together from the Top of it, where they are at first inclosed in a slight Scabbard; and each has its separate long Foot-stalk.

They are large and elegant; the Petals oblong, expanded, and of a pure white; and the Cup or Nectarium small, and lightly ting'd with yellow. It is waved at the Edge, and the yellow is in different Flowers various disposed, and

in different Degrees of Strength; but in the most delicate State it is pale.

The Characters are often obliterated by the Rise of some irregular little Petals in the Centre of the Nectarium: these are the first Tendency of the Plant to Doubleness in the Flower; and Culture may easily improve them into the full Multiplicity of Petals, which is the Character of such Flowers.

Where there is nothing of this, the Filaments are six; and these with the single Style, as in the other Narcissus's, refer the Plant to the *Hexandria Monogynia* of LINNÆUS.

Culture of this NARCISSUS.

The Plant is a Native of the southern Parts of Europe, and of the East. It flourishes naturally in a rich, deep Soil, where there is some Shade and Moisture.

It has been much improved from the wild State in our Gardens; and we have been long accusom'd to receive the Roots from *Holland*, whither they first came from the East.

Our Gardeners usually raise the Plant from Off-sets; but there is no Difficulty in producing it from Seeds; and every one knows the Advantage.

In the Method from Off-sets the Flowers are limited to the few original Kinds; and they will degenerate even from the full Beauty of these after a certain Time.

On the other hand, those who will be at the Pains to raise it from Seed, will have the Choice of innumerable Variations in the Colouring of the Cup, and Fullness of the Petals. The best of which they may preserve in Beds raised for that Purpose; and the others planted out in common Borders, will add greatly to their Beauty. In both Cases the Management is to be the same with that we have directed for the other Kinds, of which no part need be repeated on this Occasion.

C H A P. II.

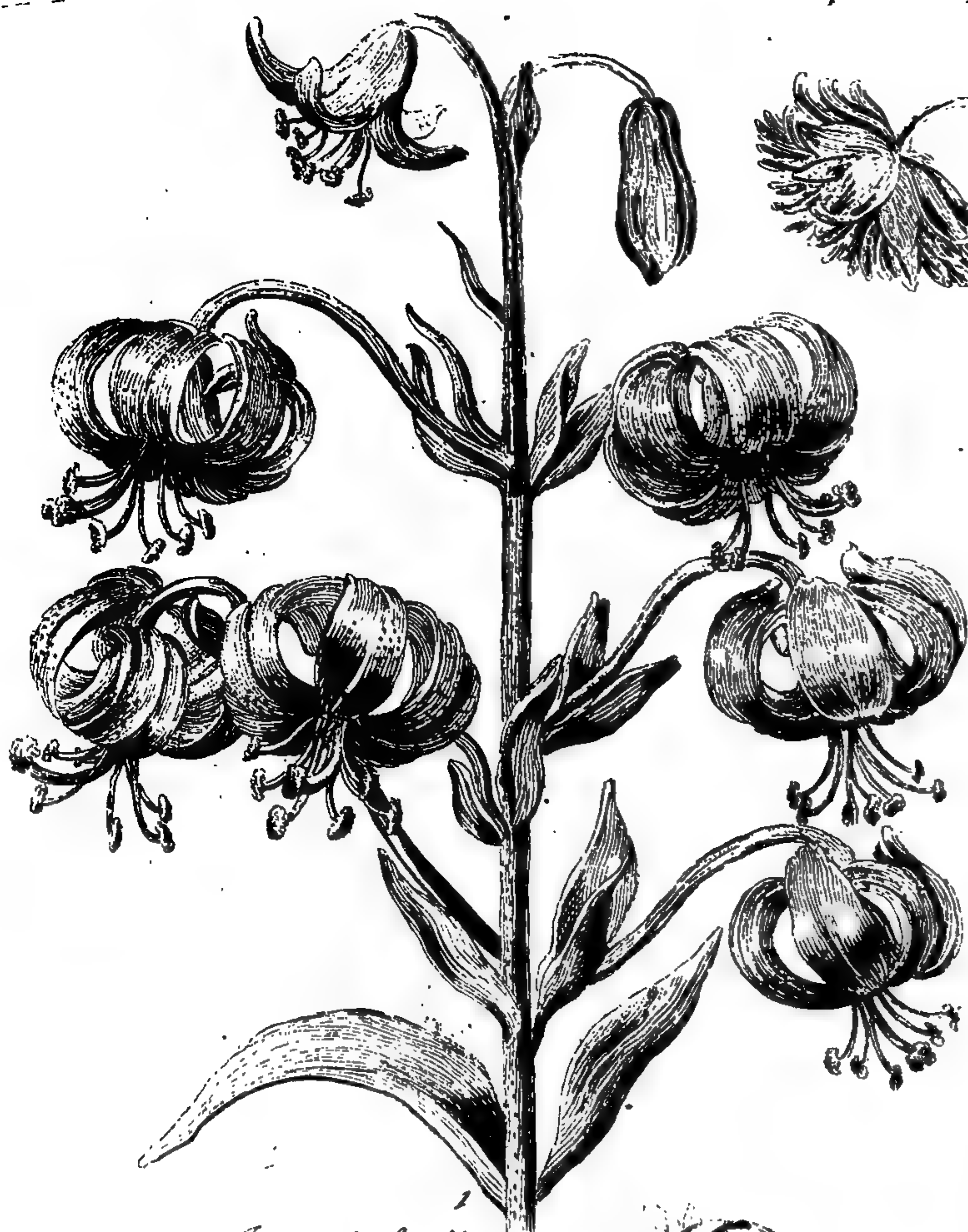
The Management of the Flower Garden, for this Week.

THE Gardener will remember that we have directed the taking up the Roots of many of those bulbous and tuberous Kinds, which do not bear to be kept long out of the Ground at the Season when their Leaves fade; that new Mould may be given them, and the Off-sets which would weaken their next flowering may be taken off. Many of the Spring Flowers are of this Kind, and this is the Season for removing them.

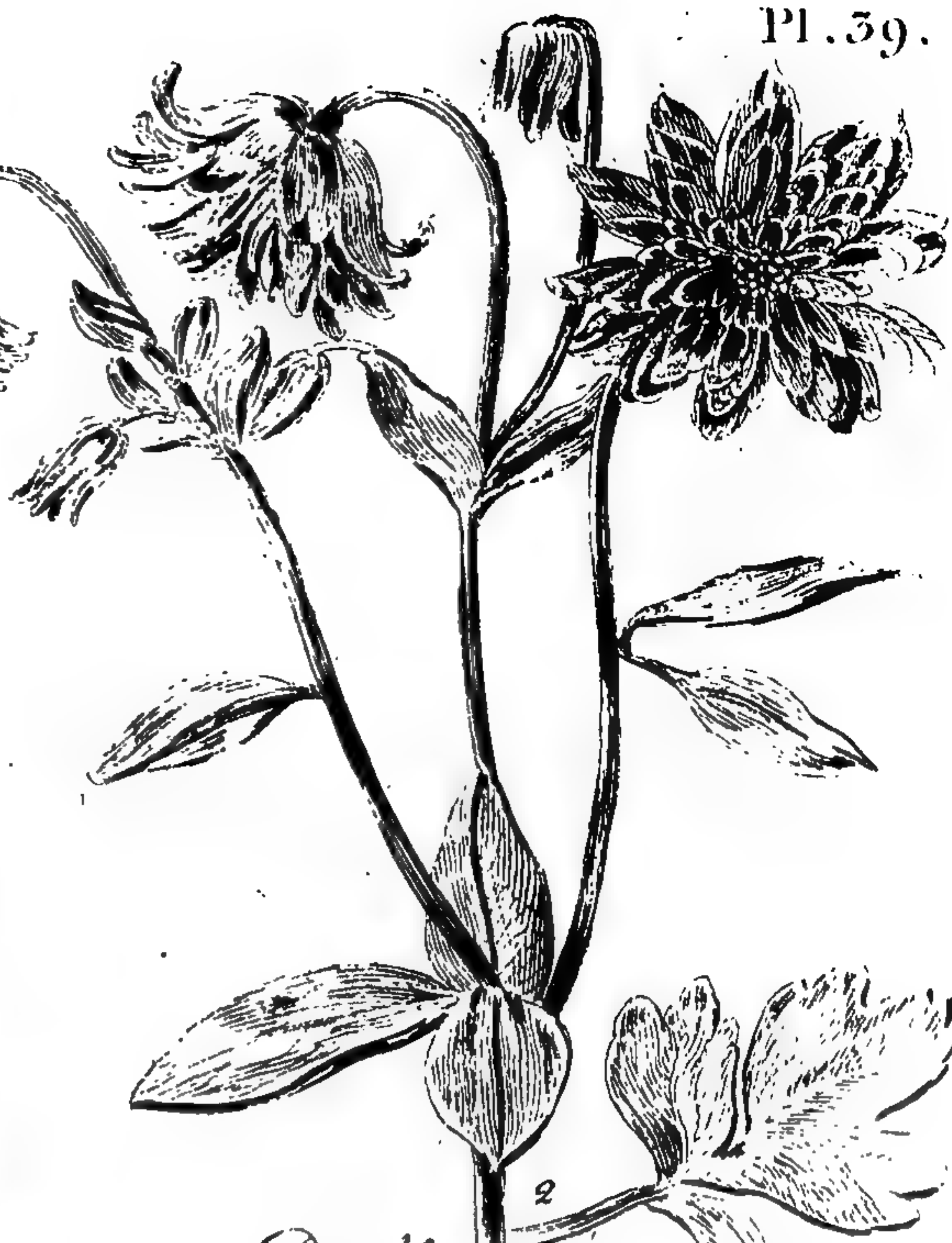
Let the Gardener see where the Leaves wither,

and take that as his Notice for doing it. The Winter Aconite, Erythronium, early Fritillaries, Spring Cyclamens, and several others, are now in a Condition for this.

Let them be taken up with Care, and the Off-sets separated without injuring the Roots. For the choicer Kinds let the Earth be taken entirely away, and a fresh Quantity of the same Kind put in its Place. For the rest let the whole be very well dug up, and broken, and let some fresh Pasture Mould be dug in among it. This will answer the



1
Imperial Martagon.



2
Double Starry Columbine.



3
Violet Bulbous Iris.



5
Yellow & White Jonquil.



4
Hungarian Iris.



6
Great White Narcissus.

June.

the Purpose; and the Roots being planted in with Care, will thrive as if in a new Soil.

There is not any thing in the Culture of Plants that has more employ'd the Attention of the Curious, or appears more essential to the practical Hands, than this renewing of the Soil for the Support of a like Growth. It depends on this Principle, that a Plant rais'd to a finer State by Culture, will degenerate again, if left in the same Ground. This is an unquestionable Truth; and to prevent this, the Gardener renews the Soil.

The Farmer finds the same Condition in his Growths; and he changes the Crops. In Gardens, where the Quantity of Mould is little, it is remov'd; in Fields, where that is impracticable, the Crop is chang'd. The Land that will no longer support a Growth of one Kind, will answer very well for another; and the same Mould, which in a Garden is remov'd because unfit for one Kind of Plant, thrown into a different Border, will serve some other.

Mr. TULL, the most inquisitive of all our Writers on Husbandry, affirms, that good Tillage will answer the Purpose of a Change of Soil; and by what I have found in Gardening, a great deal is to be done the same Way. The same Mould which is remov'd, will answer beyond what might be expected, if well wrought and put in again: the digging out and removing, and making it up into a Bed for some other Kinds of Plants, will make it answer tolerably again for the same.

What Mr. TULL has asserted in regard to Husbandry, will not exactly hold in Gardening; but it comes very near it.

Some Plants will require every Year an absolute fresh Soil, others need have the old only recruited; and in other Cases plain Digging alone will answer the Purpose. These may be call'd the three Stages of Improvement in the Soil, and one or other of them should never be omitted.

There is a Time when every Plant is in a State of rest; this is just after the Season of its full Bloom: the old Leaves fade, and soon after new Shoots rise in many Kinds; in all, new Fibres are just after shot from the Root.

The Time before the shooting of these is that in which the Roots should be taken up; and when this is done, the Off-sets should be separated, or the otherwise encreas'd Parts taken off: at the same Time the Bed should be thoroughly dug; and, if there be Need, a Refreshment of some new Soil wrought in among it. This does for all but the most delicate Kinds.

The clean'd Roots are to be planted again directly; and their new Fibres finding a fresh broken Mould, will push with Vigour, and lay the Foundation for a fine Bloom next Season. This should be done now for the Kinds we have just nam'd; and in Autumn for the perennial fibrous-rooted Plants.

We have mentioned, and shall mention, under the succeeding particular Heads, all those Plants which require to have the whole Soil chang'd; and for the others, this Digging alone, or with

N^o 39.

the Assistance of a little Refreshment of new Mould, answers the Purpose. June.

This Week, if the Weather be dry, will be a proper Time for taking out of the Ground those Hyacinth Roots we directed the Gardener to lay sideways under the Mould for swelling.

Let them be wip'd clean, and spread upon a Mat in a Room where there is a thorough Air, and where the Sun does not come. Let them be turn'd every Day, till they are well harden'd, and then put up in Papers, in a shallow Drawer, where they are to be kept till the Time of Planting in Autumn: but in this Place they must be now and then examined, to see that they keep from Mouldiness. If at any Time a Tendency to this is perceiv'd, they must be spread out again upon the Mat, and often turn'd, till they are past the Danger.

We have directed the Gardener to bring forward his Carnations for Bloom, with all Care and Attention. They must now be examined from Day to Day, for many of them will be swelling for the Flower.

The Carnation is originally contain'd in a double Cup; the outer one is form'd of four little scaly Leaves, and rises immediately from the Stalk; the inner one is large, long, of a cylindric Form, and is nip'd in five Places at the Top. The small outer Cup is calculated only for defending the Base of this inner one, which contains and defends the young Flower.

This inner Cup Gardeners call the *Pod*: it is an improper Term, for Pod is properly the Name of a Seed-vessel; but as it is appropriated in this Case, it must be explain'd. This Pod will, at the present Season, require the great Attention of the Gardener.

The Petals in the fine Kinds are very numerous; and the great Beauty of their Disposition rises from their Opening regularly. Nature has promoted this by the five Indentings at its Edge; but if they be not open'd farther, in the Condition to which Culture brings the Plant, the Multiplicity of the Petals will force them out irregularly on one Side, and the Flowers lose their regular Form, which is, in the Eye of the judicious Florist, one great Article of its Beauty.

The common Way is to open two or three Slits in the Pod; but Nature is a better Director. Let the Gardener, with a fine Pair of Scissars, open all five of the natural Indentings, about one third lower than naturally in the Pod, and observe, a Day or two after, whether this be sufficient: if not, 'tis easy to snip them down a little farther. The Care should be to give Room for the Petals, without destroying the Pod: Nature intended it for a very good Service.

The Petals in this Flower have long narrow Bases; and the Use of this firm long Cup is to keep them together. So much of it should be preserv'd entire at the Bottom as will answer this Purpose, while the Top is so far open'd as to give Way to an equal Spreading of the Petals.

This Week continue the Work of Transplanting out of their Seed-Beds the perennial fibrous-rooted Flowers; as also the biennial Kind: they

6 G

must

June. must have a fresh dug Soil, and due Distance, that they may gather Strength in the succeeding Months, to be fit for planting out in *September* in their Places in the Borders.

This Week let the curious Gardener inoculate the several Kinds of Jasmine. The *Italians* save our People this Trouble, for most of the fine Jasmynes are sent over hither annually from that

Country, in so good Order, that the most Curious content themselves with them : but the propagating them by Inoculation is easy ; and those which are rais'd in this Manner at Home, succeed better than such as we have from Abroad. The common white Jasmine is the proper Stock, and the Method of doing it we have deliver'd at large before.

June.

S E C T. II.

The Care and Management of the NURSERY this Week.

LET the common Work of Weeding and Digging between and about the new-planted Trees, be this Week continued throughout the Ground ; and if the Season be dry, let not the Gardener spare the Labour of Watering. Let Cuttings of such other fibrous rooted Plants, as were not planted last Week, be put now into the Ground, observing the same Cautions of good Digging, closing the Mould about the Plants, and due Waterings.

The Seedling Trees of the several Kinds which bear raising in the open Air, and which are not yet remov'd out of their first Beds, will require now a great deal of Care. They are but slightly and shallowly rooted, and the Sun has a great deal of Power.

Waterings must be allow'd them ; but unless a great deal of Care be taken, more Harm will come of these than Good. Unless the Water be given from a fine Pot, and be of a proper Kind,

it will either wash away the Earth from their Roots ; or chill them : and at best it will not succeed without the Help of Shelter from the Sun.

The fittest Defence in this Respect, is a Reed Hedge ; and the only Water proper to be us'd for these Plantations, is such as has stood open to the Sun for some Time, in a shallow Pond. Well Water is too hard and too cold ; River Water partakes of the Nature of this, except where the Expanse is great, and the Current slow : for in that Case it resembles more or less the Water of Ponds ; and of all others the fittest for tender Subjects, is such as has stood open to the Sun, till it have the same Temperature with the Air and Soil. As we set Water in the Stove that is to be us'd for the Plants rais'd there ; that which is employ'd for Exotic Trees in their first Growth, should in the same Manner be of the Temperature of the Earth and Air wherein they grow.

S E C T. III.

POMONA, or the FRUIT-GARDEN.

C H A P. I.

Fruits now in Perfection.

TO the short List we were able to give for the latter End of *May*, from the Resources of Art, as well as the Stores of Nature, there may be now added some others of Value.

The several Kinds of Strawberry come in naturally, and in fine Order. These set the forc'd Produce of the Hot-Bed in a very ill Light ; but they were valuable while there could no others be had.

The Cherries of several Kinds also now offer themselves ; the Dukes and Kentish, and the ear-

lier White and Black-hearts, Apricots, and even Peaches, and some Nectarines may be had from the Forcing Frame ; and to these may be added the Pine-apple, at this Time very well flavour'd, tho' it be not the Height of the Season. Indeed as artificial Heat is us'd for this delicate Fruit, the Time is less essential : they may be had the whole Year from a well manag'd Stove ; but yet those Months where the natural Air has most Heat, raise them in the greatest Perfection.

C H A P. II.

The Management of the Fruit-Garden, for this Week.

LET the careful Gardener daily look over his Fruit-Trees at this Season. Those which he sees less vigorous than the others, must be refresh'd, by turning up the Mould about their Roots, and that to a considerable Distance, with a three-prong'd Fork ; and it will be very serviceable at the same Time, to sprinkle on a little rotted

Dung, and wash its fine Particles into the Ground, by repeated and not too slight Waterings.

If any Leaves upon the others are found infested with Insects, let them be pulled off, and the Shoots all about wash'd with Water, in which Tobacco Stalks have been steep'd, to prevent the spreading of the Mischief. Let Snails, and all other

June. other Insects be carefully sought after and destroyed; and any loose Branches nailed up in their Places.

The Honey Dew which sometimes appear at this Season upon the Leaves, and new Shoots of Fruit Trees, are very prejudicial to them in all Respects: they bring together Insects which would not otherwise have been supply'd with Nourishment.

There is no Time when these little Vermin are more destructive; and none in which it is more needful to be guarded against them; as in all other Cases of like kind, the Remedy must be attempted by pulling off the decay'd Leaves, and washing the rest; and by giving better Nourishment.

The easiest Method is by strewing a little Pigeons Dung upon the Ground; and washing it in by repeated large Waterings. A Mixture of Salt and Soot has been also used with great Success to Apricot, Peach, and Nectarine Trees under this Disorder.

Let the Vines planted against Walls be this Week carefully look'd over and clear'd of the Incumbrance of weak and useless Branches: at the same Time let all side Shoots be displaced; and let the Gardener then look to the Quantity of Leaves. There is occasion for a considerable Number, but sometimes on a well nourish'd Vine there will be too many. The Fruit must not be naked, nor must it be hid from the Sun.

This is not only a necessary Care, but it is needful to be taken at this Time: few Summers are favourable to the ripening of Grapes; and if they are check'd at this Period, the Summer in effect becomes so much the shorter to them: not only the shading of the Bunches at this Time will retard their future Growth and Ripening, but the chilling Winds that sometimes blow at this Season, and cold Rains, take a very disagreeable Effect on the Grapes.

The Effect of Cold at this Time is the unequal Ripening of the Bunch: some of the Grapes

will by this Means be small; while the others have their due Growth; and a Part will be shrivelled and ill tasted; while the others have their full Bigness, and right Flavour.

The Remedy is a Reed-hedge apply'd on that Part whence the Winds blow, or a Mat drawn over the Trees to shelter the Fruit from the cold Rain.

The next Care is that of thinning them. We have directed in what Manner this is to be done in the Generality of Fruits; and it is not less heedful on the Vine than any. As we see the Grape ripen worse than any other Fruit with us, we should give it every Advantage.

The first Care is to preserve the Blossoms, and the new set Bunches: that we have given already; and when it is known what Bunches will stand, he is to consider how many of them may be left to ripen.

The first Choice must be made from the Shape of the Bunches. Those which promise to be largest and handsomest; must be left on.

In all the large Kind wherever there are two Bunches upon a short Shoot, one of them must be taken off: for one will easily come to Maturity, where both would have starved one another.

Our Seasons are often unfavourable; but we assist them; by our own Neglect many a Vine that is loaded with unripen'd Grapes, would have brought half of them to Perfection.

The smaller or middle sized Grapes must be thin'd by taking off Branches where they are too near; and the same must be done in the larger Kinds; if it be found that the first Care of thinning have not been sufficient.

The common Gardener does not think it necessary to thin the Fruit of a Shrub that is so luxuriant in its Shoots; but Experience should shew him what Reason, and a Knowledge of Nature, teaches the Philosopher, that they are different Juices which must go to swell the Fruit, and give it a due Flavour, from those employ'd in supplying the Abundance of straggling Branches.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

CHAP. I.

Products now in Season.

IN a well manag'd Kitchen Ground there will be this Week a vast Variety of Products in their full Perfection. Beside Lettuces, and the other Kinds which appear'd a little sooner, Asparagus will continue very good; and there

will be Endive, and early Celeri; Carrots, and Turneps; Cauliflowers, and Cabbages, all young and delicate; and Beans, Pease, and French Beans; Cucumbers in Abundance, and some Melons and Artichokes.

C H A P. II.

Care and Management of the Ground.

THIS will be a proper Season to transplant the young Cauliflower Plants raised for Winter Use. They must have a Bed of deep fine Mould; and they must be shaded and water'd duly till they have taken Root. If they feel any great Check from this Removal, they instantly are infected with Insects, and very rarely come to good afterwards.

This, as in most other Cases, depends upon a want of Nourishment; and what is called blighting, is usually no other than starving. Good Waterings and due shading till the Plants have well root-ed themselves, will prevent it; and often nothing can cure it.

This Week there should be some Cabbage Lettuces sown for a late Crop. The Ground must be laid very level, and the Seed sown in a calm, cloudy Evening: after which it will be proper to throw on a Piece of Bush; and in a Day or two, if the Ground continue dry, to allow a gentle Watering. This must be given with great Care, or the Seeds will be disturb'd, and more harm than good come from it.

Dig up a rich Piece of Ground for transplanting the seedling Brocoli. Draw Lines lengthway and across at three Inches Distance, and set the Plants in that Measure; they will thus take their Growth without running up so weak, as they would have done if left in the Seed Bed: after about six Weeks they will be ready for planting out where they are to remain.

We have directed the sowing a late Crop of Cucumbers in Holes for pickling: they will be now up, and require the Gardener's Care. Let him first take up the Weeds that have risen among them, and then observe which are the strongest Plants.

Three of these are to be left in each Hole; and all the rest being taken up, the Mould is to be gather'd about the Stalks of these, and they must have a gentle Watering. After this they will be in no Danger; they will grow apace, and starve the Weeds that would rise among them.

The common Practice is to leave four Plants in a Hole; and for this the Gardener pleads the Direction of the common Instructor. Let us refer him to a better Guide, Experience. We have found three Plants produce more and better Cucumbers than four.

The Melons in general will be now set in for Fruit, and there is no Time at which they require so much Care. Too much Heat, Cold, or Wet, will have the same ill Effect in making them drop off.

From Eleven to Three they should be shaded from the fierce Sun.

If the Nights be at all chill, they should be shelter'd by a Mat; and tho' it is dangerous to give them too much Water near the Head of the Plant, it will be of vast Service to water the Parts all about the Bed.

The Roots of the Melon Plant spread to a great Distance every Way; and the extream Fibres in this, as well as other Kinds, draw most Nourishment, therefore the Watering at a Distance is the true Method.

In the common Way every Gardener knows that the Waterings frequently chill the Plant by hanging upon the Stalks; throw off the new set Fruit, and rot the Branches. All this will be avoided by the Method of Watering at a Distance, and at the same Time the Advantage of Moisture will be given as perfectly as any other Way.

In the succeeding Management of the Melon Plants, nothing is so delicate a Point as that of Watering: the filling up the Alleys with a well suited Soil, trod properly down, will do a great deal; but though it keep the Roots much moister than they would be otherwise, it is by no means enough for the Purpose; nor is there any Thing so dangerous as giving a large Quantity. If the Roots want Moisture, the Fruit will not attain their due Bigness; if too much be given, they will not have the due Flavour.

In all these succeeding Waterings, the best Method is to give them at a Distance; for tho' after the Fruit is set firmly, the first Danger of beating it off in the common Way of Watering is over, yet still the Plant is better supply'd thus.

These Waterings must always be given in an Evening; and all that will be necessary farther, is to clear away Weeds carefully; to break the Surface of the Mould now and then; to lay the spreading Branches in decent Order, and when the Fruit is as big as an Apple, to place a Piece of Tile under each to promote the Ripening, and preserve it from the Damp of the Ground.

E D E N:

A

COMPLEAT BODY of GARDENING.

NUMBER XL.

For the third Week in JUNE.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Curious Plants and Flowers now in their Perfection.

I. THE LATE DOUBLE TULIP.

June.
Pl. 40.
Fig. 1.

THE Tulip, as well as other Kinds, is capable of that Multiplicity of Petals which makes what we call Doubleness in a Flower, but it is not in this State usually much regarded: the Beauty of that Flower is naturally of another Sort, and the Doubleness is rarely perfect.

The Flower we here present to the curious Reader, deserves, however, to be exempted from that general Disregard; as there is in it beside a great deal of Elegance, a Singularity in the Doubleness unknown in any other Kind.

If we would look into the Origin of double Tulips, we shall find they have been known almost as long as the Flower itself has been introduced into our Gardens.

It is not quite two hundred Years since the first Eastern Tulip made its Appearance in *Europe*; and within twenty Years after, *Clustus* gave an Account of a Tulip of the late Kind, with a double Series of Petals.

This was the first double Tulip seen in *Europe*, and was a poor Flower; the Colour being principally green: the Singularity, however, recommended it to his Notice, and to that of others: since that Time *BESLER* has figur'd two, a scarlet and a yellow, both elegantly double, and of much

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later Time. The *Paris* Garden has afforded two others, which they distinguish by the Names of the *Croustilleuse*, and the *Monstre jaune double*; the curled, whimsical, and the monstrous yellow double Tulips.

It is singular that all these have been of the late Tulip Kind. *CLUSIUS* gives this Particular in the Name of his, *Tulipa serotina viridis duplicifoliorum serie*: and *BESLER* adds the same Character of Lateness to both his, *Tulipa serotina flore pleno miniato* and *Tulipa serotina tota lutea flore pleno*: the late green, double; the late red, double; and the late yellow, double Tulip: of the *French*, the first is of the variegated Kind, and the other of the great yellow, both also late Tulips.

Our Gardens afford several Tulips which are more or less double, early and late, tho' not exactly of either of these Kinds; and they are partly such as have numerous, equal Petals; partly those with Clusters, of small and irregular ones, curling about the Base of the Inside of the Flower.

Few of these deserve Attention; and we mention without Censure, the Disregard Florists shew them; but this, of which we treat in the present Chapter, is not to be rank'd among them.

The general Growth is as in the common Tulips.

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June.

The Root is bulbous, and moderately large.

The Plant, though a very late one, is small; and has much more the Aspect of some of the early Kinds.

The Leaves are broad, oblong, hollow, waved at the Edges, and of a blueish green.

The Stalk is ten Inches high and weak; the Leaves on it resemble those from the Root, and at its Top stands a specious and most singular Flower.

Its Shape is tolerably perfect; but toward the End of the Time of blowing, the Petals spread themselves open, and then best of all disclose the inner Structure.

The Flower agrees with the common Tulips in all the general Characters: it rises naked from the Stalk; it is form'd outwardly of six Petals, and there are within six Filaments with their Buttons, and a single Rudiment of a Seed-vessel. This refers it to the *Hexandria Monogynia*, the sixth of the LINNÆAN Classes, and its first Section.

The Peculiarity is this: within the Flower there rise six smaller Petals; these surround the Rudiment of the Fruit as the Filaments do in other Tulips, and they are form'd each into a short and single Body, with a forked Head.

The Body is flat; the two divided Parts are narrow, and a little waved; and in their Centre is placed the Filament belonging to each Division of the Flower; with its Button.

The Filament is short, and has its Insertion at the Top of the single Body, between the two Divisions: the Buttons are of the usual Form; and they are shielded from Injuries by the divided Parts.

The Colouring of the Flower is very pretty. The Body is crimson, and the Points and Edges of the Petals are usually white; often that Colour is dispersed in wild Stains over the rest of the Flower, and sometimes it occupies the greater Part of its Surface.

The inner Petals are ting'd in the same Manner. Their ground Colour is a light Crimson, but the white is finely laid in long Streaks like Ribbands upon them; and often there runs between these a Rib of Flesh Colour.

June.

Culture of this TULIP.

No regular Method of Sowing can be laid down for the procuring this Flower; for as it is no more than a Variety from Accident produced by the Seeds of the common *Gesnerian* Tulip, the Course of Nature in these Productions is too little understood for Art to copy.

It has been supposed that many of the Varieties in Tulips were owing to the Roots being starved, or check'd in growing; but if that be allow'd as the Cause of breaking the Colours, the contrary must be called into the Account for an exuberant Number of Petals.

Abundant Nourishment alone can be the Source of these Redundancies; so much we may be certain with respect to the Number of inner Petals; but what it is that throws the Filaments of the Flower from their natural Origination in its Base, and mounts them upon the Summit of the Body of those singular Parts, we are yet to learn.

Let the Gardener who would raise double Tulips, enrich the Soil of his Seed Beds beyond what we have directed on that Head. Swines Dung is an excellent Addition. Let him sow the Seeds of bold and healthy Flowers; and when his Patience has obtain'd the flowering Time, let him examine what are double; and whether any in this Form.

If he miss this particular Kind, he will not fail of having enough of the finest Flowers from the succeeding Management, to answer his Trouble.

If he perceive none of this Kind, let him save the Seed of some of the double ones that ripen it well; and sowing that in the same Manner, he will probably succeed.

There is no Way but by repeated Trials; and the Comfort to the Florist is, that none of these fail of producing good Flowers. When by this Assiduity he has obtain'd one with the singular Character here describ'd, let him allow it a richer Soil than ordinary, and encrease his Store by a prudent Management of the Off-sets from its Root.

2. ORIENTAL MEADOW CROWFOOT.

Pl 40.
Fig. 2.

The Crowfoots of our Meadows are not without their Beauty; and the Varieties raised from them by artful Culture are all very pleasing.

From the East we received long since into our Gardens, a nobler Kind, which we have filled with Petals doubled like the Rose, and ting'd with various Colours; but there are yet others, Natives of remote Climates, that will readily live in our Gardens; and tho' of the wild Aspect naturally, yet capable of all the Elegance that can be given to other Flowers by Culture.

Of this last Kind is the Plant named here, it has been raised from Seeds brought from the

remotest Part of the East; and wearing at present its natural Aspect, appears more of the *Meadow Crowfoot* Kind, than of that which has been so long, and so justly esteem'd in our Gardens.

The Singularity will now recommend it, but 'twill be easy to give it a new Form by Culture.

The old Botanical Writers have not been acquainted with the Plant: we owe it to our latest Travelers. The Student must not therefore expect to be told what it has been called by those Authors, but that it is named with Propriety by LINNÆUS, *Ranunculus feminibus spinoso subulatis recurvis calycibus reflexis foliis multifidis*: Meadow Crowfoot, with

June. with multifid Leaves, with prickly bent Seeds, small to the Point, and with the Cups turn'd back.

The Root is compos'd of numerous long Fibres, connected to a small Head.

The first Leaves have long hollow'd Footstalks, and they are large, and divided into a Multitude of long narrow Segments: they are of a tough Substance, and their Colour is a greyish green. They are covered with a loose cottony white Matter.

The Stalk is a Foot high, upright, round, and divided into a few Branches.

The Leaves stand alternately on this, and resemble those from the Root, by their Division into numerous, long, and narrow Parts. Their Colour is the same whitish green with that of the others, and they are covered with the like cottony Matter.

The Flowers terminate the Stalks and Branches, and several are supported also on slender Footstalks, rising from the Bosoms of the upper Leaves: they are in the whole, numerous; and they are conspicuous both in Size and Colour. They are half an Inch in Diameter, and of a very fine, tho' not strong yellow.

The Cup is compos'd of five oval Leaves, and these, when the Flower is open, turn back; and, hanging downward, shew the Hollow of their Inside ting'd with the yellow of the Flower, tho' paler.

Five Petals form the Body of the Flower, and these are obtuse at the End, broad, and fix'd to the Receptacle by small Bases. A little above this Part, in each Petal, there is a small Hollow, the Nectarium.

The Centre of the Flower is fill'd with a Multitude of Filaments, and a Cluster of Rudiments of Seeds, with their Heads, plac'd in the Midst. The Filaments are short, and they are crown'd with doubled Buttons. The Rudiments have each its separate Head fix'd to their Summit, without any Style; and when the Flower is fallen with its Cup, these ripen into so many oblong pointed Seeds.

To know the Class and Place of the Plant in the LINNÆAN System, the Student must trace these numerous Filaments to their Origin. He will find they rise from the Receptacle; and that the Plant is therefore one of the *Polyandria*: the numerous Rudiments refer it also to the *Polygynia*.

Culture of this CROWFOOT.

The Plant is a Native of the East, where it thrives best in a deep Mould, with some Moisture. The Seeds grow freely with us; and it flowers, as in its native Meadows, in the Borders of our Gardens.

The Division and Colouring of the Leaves distinguish it at Sight from all the *European* Kinds; and there is something in the Size and Colour of the Flower that naturally strikes the Eye: we propose to enrich this with additional Petals, and that Way to make it a proper Ornament of the Flower-Garden.

There is no Plant in which Nature is more apt to be luxuriant in the Number of Petals, than the Crowfoot. In the common Kind, which at this Season gilds our Meadows, there are frequently six, seven, or more, instead of five; and we see frequent in our Gardens, the upright Kind, brought in from our Pastures elegantly double.

What is so familiar in the *English* Meadow Crowfoot, I have seen in this Oriental Kind: in one Flower gather'd from a thriving Plant of it in Mr. LEE's Garden, I counted nine Petals, tho' the Generality had but five, according to the natural Limitation: from this 'tis plain, that Nature is inclin'd to this Redundance in the Flower; and on that Observation it is not rash to form the Purpose of rendering it by proper Culture, double, in the Manner of the common upright Crowfoot. In this Case, the Plant would be extremely elegant. The Flowers, naturally larger, and of a more delicate yellow than in that Kind, would give it a great Preference; and as they are numerous, and the Branches not straggling, one may expect to see such a Plant well train'd, cover'd with a compleat Head of Flowers, each of the Bigness of a Walnut, and of a delicate Lemon Colour.

This is the State to which the Gardener should attempt to bring the Plant. It has not yet been done, but Nature gives plain Indication that it may: 'tis a proper Subject for his Art, and he will get Credit who shall first shew the Flower in this Perfection.

The Method of attempting it must be this:

Let one of the Plants now in Flower be mark'd for Seed. Let all the Flowers and Buds be cut from this, except three or four, and if there happen to be a Flower with more than the five common Petals, let that be certainly one of those sav'd for Seed.

Let the Ground be clear'd of Weeds and other Plants, of whatever Kind, for a Yard round about this; and once in four Days let the Surface be well broke with a Trowel, not going so deep as to disturb the Roots. Let the Stalks that have Flowers on them, be ty'd up to Sticks; and every Evening give the Plant a gentle Watering.

Let this be continued till the Flowers are fallen, and the Heads of Seeds have their full Bigness: then give no more Water, but leave the Seeds to harden upon the Stalk.

When they begin to be loose, carefully cut off the Heads, and lay them to dry upon a paper'd Shelf.

Thus there will be a Certainty of good Seeds; and the next Care must be to compose a proper Soil. In this, and in the Situation, Nature must be the Rule.

In all these Cases, the same Kind of Soil should be chosen that Nature shews most suited in the wild Growth of the Plant; and the same Kind of Situation.

Mix for this Purpose a Bushel of rich Meadow Earth, taken from under the Turf where there is some Moisture; three Pecks of Pond-Mud, and two of rotted Cow-dung. Throw in two Quarts of coarse Sand, and work the whole together.

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June.

Chuse a Part of the Nursery that is not too much expos'd to the Sun; and in the latter End of *August*, taking out the Mould from a small Piece, throw in this Compost five Inches thick. Scatter the Seeds over the Surface, and sift upon them a third of an Inch of the same Mould. Lay a Piece of Hawthorn over the Bed, and leave it to Nature. All the Care it will require farther will be weeding in common with the other Ground; and if the Surface should grow very dry, a gentle Watering.

When the young Plants appear, they must be water'd more frequently; and thin'd if they stand any where too close.

In the Middle of *April* let another Bed of the same Compost be prepar'd for them. Let them be taken up out of the Seed-Bed, and planted regularly in this, at seven Inches Distance. Here let them stand till Autumn, and when they shew the Signs of sending up a Stalk for flowering, let it be cut off in Time, for the whole Business now is to strengthen the Roots.

In Autumn let another Bed be prepar'd of the same Compost, and plant them again, at ten Inches Distance. Cover them in the hard Frosts of Winter, and the next Year let them flower, without any other Removal.

The Plants from this Culture will greatly exceed those from whence the Seeds were taken; and many of them will probably shew semi-double Flowers. The Seeds of these must be saved, as we have directed for the others; and these being sown in the same Manner, and the young Plants managed with the same Care, will probably afford the Plants we have thus purpos'd to raise; such as shall have the Flowers perfectly double.

When such a Plant is once obtain'd, the Propagation of it will be easy: all these fibrous Crowfoots spread at the Root abundantly; and by parting them in Autumn there will be a quick Encrease.

That double Flowers of this Species may be rais'd, is plain, from what we see so familiar in the other Kinds; and we find in them, that each retains its original Character and Bigness, when thus fill'd with Petals.

The double Flowers of the common upright Crowfoot, tho' cluster'd full of Petals, are small; and the double Flower of the common creeping Kind, is, on the other Hand, large and specious. The Size would therefore naturally be preserv'd in this, and the delicate pale yellow. These, with the silvery Whiteness of the whole Plant, would render it a Species highly worthy its Place in every good Garden.

June.

3. HUMBLE POLEMONIUM.

Pl. 40.
Fig. 3.

The Gardener is to be inform'd, that under the Name *Polemonium*, is now understood the Plant which the Vulgar have been accusom'd to call *Jacob's Ladder*, and those a little more acquainted with the Subject, *Greek Valerian*. That is a Plant common in every Garden, and distinguish'd into two Varieties by the Colour of the Flowers, the Blue, and the White.

It had been very improperly numbered with the *Valerians*: but those less accurate Writers, who considered the general Aspect of a Plant, more than the essential Characters, when they reduc'd it, in their Way, to its Genus, might very naturally fall into that Error: the winged Leaves, and terminating Tufts of Flowers, give the Plant the general Air and Aspect of a *Valerian*, tho' its true Characters, plac'd by Nature in the Flower, and there read by the more accurate Eye of modern Science, are perfectly distinct.

The Genus thus distinguish'd from *Valerian*, LINNÆUS has nam'd *Polemonium*; nor must the Reader suppose he has by this confounded it with one yet more distinct, the *Poley mountain*. That had been called *Polium montanum*, a Name some have confounded with *Polemonium*; but he takes off the Epithet, and writes that simply *Polium*.

The Gardener thus understanding that *Polemonium* is the Generical Name of the Plant he has been us'd to call *Greek Valerian*, will perceive, at the first View of the Figure of this Plant, that it is of the same Genus, as well as that it differs specifically from the common Kind. The Name *humble* we have given from its lower Stature, and more tender Construction, than in the common

Kind; and he is not to expect he shall meet with any other.

The Plant is a Native of *North America*, and but newly known in *Europe*. The old Writers have therefore no Name for it; and LINNÆUS, who has seen the Plant, considers it as a Variety, not a distinct Species, and has therefore given it no separate Name.

All the Reverence we owe that Author's Judgment must not shut our Eyes against Truth and Nature: the Plant is distinct in Species from the common Kind, and may be call'd *Polemonium pinis paucioribus ovatis*: *Polemonium*, with few and oval Pinnæ.

That Author has done great Service to Botany, by reducing Varieties to their proper Species; but the Description of this Plant (with which we shall mention the correspondent Parts of the common) will shew that he has here carry'd the Reduction too far.

The Root is fibrous, and spreads abundantly under the Surface.

The first Leaves are long and winged; each is compos'd of about four Pairs of Pinnæ, and these are of an oblong oval Form, obtuse, and pale. In the common Kind there are from twelve to twenty Pairs, and they are pointed, and of a fresh green.

The Stalk is round, lightly striated, weak, usually a little bent, and of a pale green. In the common, it is firm, rigidly upright, high ridg'd, and ting'd with a purplish brown.

The Leaves in this are few, rarely more than three or four, and plac'd at considerable Distances:

in

June. in the common they are numerous, ten, twelve, or more, and stand near.

Each Leaf in this Plant is composed of about three Pair of Pinnæ, with an odd one; and these are oval, distant, and spread out flat: in the common Kind there are in each Leaf eight or ten Pair of Pinnæ; and they are oblong, narrow, waved, placed close to one another; and of a strong green; they also stand obliquely, not flat.

The Height of this is about a Foot; that of the common two and a half.

The Flowers terminate the Stalk in a small loose Tuft, and other little Clusters rise on slight Footstalks from the Bosoms of the upper Leaves. In the common Kind they are more numerous, and the Tufts are thicker.

Their Colour in this is a faint, but delicate greyish blue; in the common it is a deep blue, approaching to a violet purple. The Colour of the Buttons on the Filaments in this is white: in the other they are of a Gold yellow, extremely conspicuous. The Petals in this Species are rounded at the Ends, in the common kind much less so.

With these Distinctions which Nature strongly shews, the Student will determine, tho' against LINNÆUS himself, that it is a different Species.

Each Flower is placed on a Cup form'd of a single Piece, divided into five Segments, and expanded at the Mouth. These are of a pale green, and very delicate; and they have scarce any perceptible Hairyness.

In the common Polemonium they are ting'd with brown, as the Stalk, and are firmer and more hairy.

The Flower itself is form'd of one Petal, divided into five large Segments, which open wide and elegantly.

The tubular Part is shorter than the Cup, and the opening is cover'd by five small and delicate Valves. From these rise so many Filaments

shorter than the Flower, a little bent, and crown'd with roundish incumbent Buttons.

In the Centre appears a Rudiment of an oval Form, from which rises a single Style longer than the Filaments; and crown'd with a three-parted Head, whose Segments turn back.

The Seed-vessel which follows this Flower is of an oval Form, but mark'd with three Ridges, and contains numerous Seeds.

The Class of the Plant is easily read in this Flower: the five Filaments and single Style shew it one of the *Pentandria Monogynia* of LINNÆUS.

Culture of this POLEMONIUM.

It is a Native of *North America*, and therefore requires little Care or Pains to raise it in our Gardens. It grows freely from Seed, and never alters its Form; which, if only a Variety, it would do: but the parted Roots grow so easily, and it increases this Way so abundantly, that nothing but a Curiosity to try the Experiment of the Species, could lead any one to be at that Trouble. No Varieties are to be expected; no Advantage from such Culture: therefore all the Pains we advise the Gardener to bestow upon it is, to adapt a proper Soil, which should be equal Parts of rich Meadow Earth, and Garden Mould, and to put this into some Place where there will be shade from the Noon-day Sun.

In this let parted Roots be planted in Autumn, and no farther Care will be needed. It will live like a Weed: if the Ground be now and then water'd about it, it will thrive the better; and at Autumn the Stalks and Leaves may be cut down together, and some fresh Mould drawn over the Stumps. It will thus become perfectly vigorous, and a large Tuft of it will give Variety in any Plantation.

4. DOUBLE WHITE CROWFOOT.

Pl. 40.
Fig. 4. What we have proposed to be done in the oriental Meadow Crowfoot, and instanced in the common creeping, and the common upright Kinds; the doubling of their several Flowers by Art, has been long done in this, and we owe to it one of the prettiest Plants that decorate our Borders.

Nature first shew'd it in this State by Accident to the early Botanists: for what we achieve by Labour, and a delicate Application of our best Knowledge, she often pours spontaneously before us in her Wantonnesses upon the untill'd Fields.

We see the Double Lady'snoek, and Double Sneezewort in our Meadows and Pastures; and in the same Manner. This elegant Plant which in the single State is common in the now desolated Fields of *Bohemia*, sometimes courts the Attention even of the incurious by its rosy

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Fullness there.

Thence it was brought first into Gardens; for we are not to suppose that what we find it now so difficult to effect under the improved State of Gardening, was familiar to those who practised the Art in the rude Days wherein we find first mention of it: but what they brought from Fields into their cultivated Ground, and were proud to preserve as they found it, we have improved; and with due Industry and Art can raise for ourselves.

Among the earlier Writers, all who had seen the Plant were struck with his Beauty; and to their Credit, they have all named it properly. Indeed the Characters of the *Ranunculus* Kind are too obvious to be overlook'd, or mistaken easily: they have called it, *Ranunculus flore albo alpinus*, and *Ranunculus montanus maximus albus*: The white Alpine Crowfoot, and great white

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June. Mountain Crowfoot: and C. BAUHINE in particular, *Ranunculus montanus aconiti folio albus flore majore*.

These were its Names in the simple State of the Flower; and though they have not distinctly named or described this elegant double Plant, they all observe that it is sometimes found with full Flowers.

These Writers too often name Varieties distinctly as Species, but 'tis an Error they have here avoided.

LINNÆUS, more distinctive in his Names of the Species, calls this, *Ranunculus foliis omnibus quinatis lanceolatis inciso serratis*: Crowfoot with all the Leaves divided into five Parts, and those lanceolate and deeply cut and notch'd. In this he refers to the Plant in the single State of the Flower, naming the double Form as a Variety.

The BAUHINES and others have divided the Plant, tho' not from the Doubleness, yet from the Size of the Flower, into two imaginary Species. They distinguish them by the Addition of *flore majore*, and *flore minore*; the greater flower'd, and lesser flower'd white Crowfoot: LINNÆUS refers these as the other, to the proper original Species; no more allowing the Bigness of a Flower to constitute a particular Kind, than the accidental Number of its Petals.

The Root is composed of numerous thick spreading Fibres, which rise as it were immediately from the Base of the Stalk, without any Head.

The first Leaves are supported on long Footstalks, and are of a deep but elegant green.

They are divided to the Base into five Parts; and these are oblong, broadest toward the Middle, and sharp pointed; and they are deeply jagged, and notch'd at the Edges.

The Stalk is round, thick, and branch'd; two Foot and a half high, of a pale whitish green, and often stain'd brownish.

The Leaves on this are like those from the Root, only smaller; and they stand irregularly, and at Distances.

The Flowers terminate the Branches, and are very numerous and elegant: they are of a snowy Whiteness; and are composed of numerous Series of small, curled, and waved Petals.

This is the elegant State in which the Plant

comes properly under the Gardener's Cognizance.

June.

The Botanist who desires to trace it to the proper Class, must have recourse as usual to a single Flower. This he will find in all Respects, except Colour, like those of the common Crowfoot of our Meadows. It has its little Cup of five Leaves: the Petals are five, and each has its hollow at the Base, the Nectarium of the Flower.

The Filaments which are extremely numerous, rise from the Receptacle, and surround a great Cluster of Rudiments of Seeds; each of which, tho' destitute of a Style, is crown'd with its proper Head. These, which we have before observed are the Characters of all the Crowfoots, refer that Genus to the *Polyandrous* Class, and under that Head to the last Division, the *Polygynia*.

Culture of this CROWFOOT.

The Climate and Soil in which a Plant is naturally produced, are the Gardeners everlasting Rule for its Culture. This shews the Plant here mention'd, can want little of his Labour. What the Meadows of *Germany* produce, will support itself with Ease in the Gardens of *England*; and there will require no Compost. The common Mould will very well nourish; and the parted Roots encrease it.

The Seeds in double Flowers rarely ripen well; the Root in this Plant encreases freely; and no farther Perfection can be expected in the Bloom, than perfect Doubleness and a true white. These will be continued to it when the parted Roots are planted with tolerable Care; and all that it can require farther, will be at due Times a fresh Soil.

The Way of managing it is this: every Autumn let the Roots be taken up, and planted again in a Bed of fresh Mould. When they have extended themselves to a considerable Bigness, let them be parted; and toward the Season of their flowering, let them have frequent moderate Waterings.

Let the Flowers be taken off as they fade, and new ones will be thus produced in Abundance; by this, with the Benefit of watering it, will flower all Summer.

5. S A N G U I N A R I A.

Pl. 40. We propose here to the Attention of the curious Gardener, a Plant singular enough, and not without Beauty; easily raised and preserved, and demanding the more Attention for its long flowering. The old Authors could not be acquainted with it, for it is native only of *America*; and tho' very worthy a Place in all Gardens, it is yet in a manner confined to those of the Curious.

The first in whose Writings we find an Account of it is CORNUTUS; and he, perplexed by

its peculiar Aspect, scarce could guess to what Genus to refer it. He called it a *Chelidonium majus*; adding as its Distinction from the other of that Name, *Canadense acaulon*: the great Celandine of *Canada*, without a Stalk.

In this generical Name MORISON and RAY concurred; and they copy'd also the distinctive Terms by which that Author explain'd the Species, unalter'd.

Our laborious PARKINSON ranks it in the same Manner under the Name *Celandine*, treating of that

June. that Genus; and in another Place, not conceiving that it was the same Plant, describes and figures it under the Title of the *White Virginian Crowfoot*; *Ranunculus virginicus albus*.

To the more distinguishing Eye of DILLENIUS, both these Names appear'd improper; he separated the Plant from the *Celandines* and *Crowfoots*, calling it *Sanguinaria*. This Name LINNÆUS retains. DILLENIUS distinguishes what he calls three Kinds of it, a larger and a smaller with single Flowers, and a larger with double.

These the more accurate Writer just named, (not allowing the Size of a Flower, or Number of its Petals as distinctive Characters of Species) refers to the one original Plant of CORNUTUS; and as there is no other Species known, he adds nothing to the generical Name, but calls the Plant simply *Sanguinaria*.

We owe our Countryman RAY the Justice to observe, that his Discernment shew'd him it was not properly of the *Chelidonium* Kind; tho' he did not give it another Name.

MORISON, on the other hand, seems to understand that the yellow Juice with which it abounds, justifies the calling it a *Chelidonium*. Those were but slightly improved Times of Science, when the Student was refer'd for the Character of the Genus, to the Colour of the Juice.

The Root is thick, fleshy, brown on the Outside, and when broken, yellow.

The Leaves rise from it singly on long Footstalks. They are few but large, of a greyish green, and of a somewhat rounded Form, but cut in at the Edges like the Leaves of some of the less indented Vines.

Their Footstalks toward the Ground are redish; and both these and the Leaves when broken, yield a thick yellow Juice in the same Manner as the Root; like that of the great *Celandine*, but of a strong and unpleasing Smell.

The Flowers are large, elegant, and of a pure white. Each is supported singly on a naked, slender, and low Footstalk; red toward the

June. Ground, and paler upwards; and from its Size which is more than equal to that of the largest *Meadow Crowfoot* Flower, as well as the snowy Whiteness, it appears very conspicuous.

The Cup is slight, form'd of two hollow oval Leaves, and of short Duration.

The Number of Petals in the Flower is properly eight, but Culture usually makes them more. In *America* this Number is constant; but in our Gardens it is commonly exceeded: this, as well as the Shape of the Seed-vessel, should have shewn the first Authors who named the Plant, that it was not a *Celandine*; for in that Plant they are only four.

In the Centre stand numerous Filaments, short, slender, and crown'd with simple Buttons; and in the Midst of them an oblong Rudiment of a Seed-vessel, crown'd with a thick furrow'd Head, without any intermediate Style.

The Seed-vessel when ripen'd is oval, and contains in one Cell numerous rounded, and pointed Seeds.

The Filaments adhere to the Receptacle. This, with their Number, shews it one of the *Polyandria*, and the single Head one of the *Monogynia*.

Culture of this SANGUINARIA.

A Native of *North America*, can need little Care to raise it in our Gardens. The natural Soil of the Plant is a deep rich Mould, and it loves some shade. Such a Part of the Garden must be chosen for it as is not expos'd to the Noon-day Sun; and some Pond Mud dug in among the common Mould, will excellently support it.

The parted Roots produce the Flowers very perfect; but the Seeds ripen with us, and grow freely. It will be very well worth while sometimes to sow them, for the Chance of obtaining larger, and more double Flowers.

It begins flowering in *April*, and if expos'd to the Sun is soon burnt up; but under shade, will continue till this Time.

6. DEADLY NIGHT-SHADE.

Pl. 40.
Fig. 6.

Two Reasons will occur at the first Sight of this Name, for which the Gardener will think the Plant should be despised and hated: that it is *English*, and that it is *poisonous*. But we shall shew him, that tho' a Native of his own Country, it is worth his Notice; and tho' esteem'd poisonous, will probably be found superior in Virtues to the whole Vegetable Class. All the late Authors name it; and the Generality of them have refer'd it, as the Vulgar do, to the Night-shade Kind; though improperly. They called it, *Solanum melanocerasos*, *Solanum manicum*, and *Solanum lethale*: Black Cherry Night-shade, Mad Night-shade, and Deadly Night-shade.

TOURNEFORT justly separated it from the *Solanums* by the Name *Belladonna*; and LIN-

NÆUS who preserves the Distinction, discarding that unscientific Term, has called it *Atropa*. He adds as the Distinction of the Species, *caule herbaceo foliis ovatis integris*: Herbaceous *Atropa*, with oval undivided Leaves.

The Root is long, thick, and brown.

The Stalk is a Yard high, purple at the Bottom; of a pale green upwards; thick, hairy, and divided into a few Branches.

The Leaves are numerous, and placed irregularly; they are oblong, broad, not at all indented at the Edges; of a faint green, and hairy.

The Flowers are very numerous, and singular in their Aspect. They rise from the Bosoms of the upper Leaves, and are hollow, oblong, and large; of

June. of a dusky greenish Colour, striated and stain'd in various Degrees with a dull purple.

The Base within is yellowish, and the upper Part purple.

These Flowers are succeeded by large beautiful glossy Berries, of a fine jet Black, and the Cup of the Flower remains with them. This Cup is form'd of a single Leaf, divided deeply into five Segments.

The Body of the Flower is form'd of a single Petal, tubular and small at the Base, swell'd and hollow in the Body, and at the Edge divided into five little wav'd Segments.

In the Hollow of the Flower are plac'd five Filaments and a single Style: the Filaments converge at their Bases, and spread out to the Top, and they have large doubled Buttons: the Style is slender, and a little bent; as they are: it rises from a roundish Rudiment of the Berry, and is crown'd with an oblong Head, placed transversely: the Berry contains several Kidney-shaped Seeds.

The five Filaments and single Style plainly refer the Plant to the *Pentandria Monogynia*, the fifth Class in the LINNÆAN Method, and its first Section.

Culture of this ATROPA.

June.

It is wild in our own Kingdom; and consequently will be hardy in our Gardens. The Root is perennial, and the Berries ripen freely; so that the Plant may be propagated either by parting the one, or sowing the Seeds from the other. It requires a deep mellow Soil; and when once fixed in such a one, will keep itself alive.

All the Care required about it will be to cut down the Stalks before the Ripening of the Berries, for they have a tempting Look to Children; and, if eaten, will destroy them.

This Plant has stood now some Centuries under the Brand of poisonous; and not without some Reason, for it is capable of Destruction. Many have perish'd by it; but it perhaps may save more than it has killed. Poison is a vague Term, and may be apply'd to most of the powerful Medicines, *Opium*, and the like, in over Doses. What Ill it has done all have heard; what Good it is capable of doing should be known as universally.

Of the Use of Deadly Nightshade.

THE Antients speak of a *Solanum manicum*, or *Solanum furiosum*, so nam'd from its Effects in producing a temporary Madness. They have been understood to mean this Plant: but their Commentators have erred: MATHIOLUS is with Reason to be excepted from the Censure; for he judg'd more truly, that it was unknown to them.

Their *Solanum*, whose Name was simply the Word *Strychnos*, had, in a smaller Dose, the Effects of Inebriation; in a larger Quantity it caus'd Madness; and in a yet larger, Death.

Thus much THEOPHRASTUS says of it. A Dram of the Root given in Wine, produc'd the lesser Effect, two Drams brought on the greater, three Drams occasioned Madness for Life, and four were fatal. This is the Account given by the Father of Natural Knowledge; and this Dioscorides, and those who followed him, transcribed; adding or altering slightly, according to their particular Opinions.

From these Greeks the Romans took their Detail. PLINY has joined the Words of THEOPHRASTUS and Dioscorides together: AETIUS is but a Transcriber of Dioscorides; and most who came later have copy'd PLINY. Hence we have the History of the Greek *Strychnos*, and its Intoxications, which they call'd *Strychnomania*, the Madness of *Solanum*: and all this late Writers have attributed to the Deadly Nightshade.

The old Greeks knew three Nightshades: the Garden Kind, which they held innocent; the

Somniferous, which brought on Drowsiness; and the furious or mad Nightshade, whose Root in various Doses occasioned these different Effects.

They have left Descriptions of all these Kinds: and none of them agree with our Plant; neither do the Doses. They assert, that a Dram of the Root of the *Solanum furiosum* might be given with Safety; but a few Grains of that of our Deadly Nightshade have been found fatal.

The Deadly Nightshade therefore is not the *Solanum furiosum* of the Antients; nor do their Descriptions of that Plant agree with it: for that had Leaves like the *Rocket*, or *Acanthus*, and cluster'd Berries as the *Ivy*. The Deadly Nightshade does not appear to have been known to them; but it possesses the same Qualities in a superior Degree: a Grain of it being equal in Effect to a Dram of theirs. It is able to bring on the *Strychnomania*, or Nightshade Madness; and, when taken inadvertently, is fatal.

With these bad Qualities, it possesses also great and salutary Virtues; and these were early known; though they have been too much neglected. MATHIOLUS mentions the Use of it internally, in the distilled Water, against Inflammations of the Viscera; and in a Syrup from the Juice of the Berries: as also outwardly, in various inflammatory Swellings.

In the Writings of those who first describ'd the Plant, it is strongly recommended as a Cure for Cancers. This, tho' an important Article in its History, was long overlooked, and it was dreaded as a Poison, while neglected as a Remedy for



Late double Tulip?



Oriental Meadow Crowfoot.



humble Polemonium



Double white Crowfoot.



Sanguinaria.



Deadly Nightshade?

June.

for the most desperate of all human Maladies. They have read and remembered the Stories of GERARD, concerning Children kill'd by the Plant, who never regarded the absolute Account of Mr. RAY, of Cancers which it cur'd.

This Author, whose Candour and Veracity are unquestioned, gives an Account of Mr. PERCIVAL WILLUGHBY's using the Leaves externally, for the Cure of Cancerous Tumors of the Breast; with the greatest Success: He adds, that himself also saw an amazing Effect from a Piece of the Leaf laid on a Cancerous Tumor under the Eye, which so dilated the Pupil, that it remained a long while four Times as big as that of the other; and incapable of Contraction, even by the Effect of the Sun Beams.

Happily for the World, a Foreigner, struck by the concurrent Testimony of many Authors, that this Herb had so great Virtue in that terrible Disorder, try'd it lately; and restor'd its Credit.

From his Account, some who dared, for the public Benefit, leave the beaten Tract of Practice, determined they would give it a fair Tryal here: but this an Accident had nearly frustrated. The dishonest Herb-sellers not having the Plant, sold under its Name the common Nightshade, call'd, from its frequent Appearance as a Weed upon cultivated Ground, Garden Nightshade.

This had great Effects; and encouraged the Gentleman who us'd it, the eminent and ingenious Mr. GATAKER, to whom the Public owes the establishing the Virtues of Nightshade in *England*, to hope greatly from it, tho' it effected no perfect Cure: and he has since given it in other Cases

with vast Success. I have now put into his Hands a growing Plant of the true Kind, and he is using it successfully.

The Effects of it are Vomiting, Purging, and Sweats. The Leaf is the Part used; and the Dose an Infusion of half a Grain.

Its Safety under this Regulation being established, and its Effects known, those who have Opportunities, and Humanity, are invited to use it. It will be Virtue in all who have Skill, to try the Medicine; and those who do not know where otherwise to obtain the true Plant, are welcome to as much as they want from me. From a Multitude of such Trials the Fact will be ascertain'd; and I am able to acquaint the Public, that beside the successful Experiments first made with it in *England* by Mr. GATAKER, at the *Westminster* Infirmary; Dr. PITCAIRN and Mr. NOURSE are at my Request now using it in two desperate Cases at *St. Bartholomew's* Hospital; and Dr. CLEPHANE at *St. George's*. It may be proper also to use it outwardly at the same Time.

From Trials under various Hands, establishing or correcting one another, its Virtues will be truly ascertain'd; and probably a greater Medicine brought into Use than any known at present.

If any are terrified at the Name of its being poisonous, they will be found among the Patients, not the Prescribers; and they may be told, what the others well know already, that Antimonial Preparations have been prohibited; and that one of the greatest Medicines now known, is the Corrosive Sublimate of Mercury, long considered as a most fatal Poison.

June.

CHAP. II.

The Care and Management of the Ground.

LET all Weeds be destroyed at this Season with more than ordinary Care, for 'tis their Seed-time, and one that ripens them, will lay the Foundation of an innumerable Progeny.

Let the Ground be broke frequently about those Plants which are to flower late in Summer, and thro' the Autumn; and when it appears too dry, let them have moderate Waterings. Cut off straggling Branches, tie up the rest with the main Stem, where necessary, and form the spreading Plants in Time into good Heads.

We directed the Gardener last Week to open the Cups, or as he calls them, the Pods of his Carnations, in several Places, with a Pair of Scissars; to favour the spreading regularly of the Petals: let him now examine whether what he then did was sufficient, or they yet want more Room: If he find them in Danger of bursting in any one Part, let him open the Slits he made at that Time, a little farther. The Beauty of this elegant Set of Flowers, will depend greatly upon this Article, and their Duration upon their being properly shaded.

N^o 40.

Their Elegance, and his Trouble in bringing them to Perfection, demand all the Attention that can now be shewn them, for the keeping them in Bloom as long as their Nature will admit.

As soon as the Petals begin to spread themselves out, the Flowers must be covered with Glasses, to secure them from Moisture; and great Care must be taken to preserve them from the Heat of the full Sun, which will be felt the stronger thro' the Glasses. The taking these off at such Times will not answer the Purpose, for the Sun is too powerful alone; nor does the Method some use of oiled Paper, instead of Glass, answer the Purpose. The great Art of preserving Flowers long in Bloom, is to screen them absolutely from the Noon-day Sun, and this can be no Way so well done, as by the covering these Glasses with something that will not let the Rays through. Some Gardeners use a Cabbage-Leaf; but as there is no Intent of any thing more than Shade, it is wrong to take a Substance in which there is Coldness and Moisture. What I have found best is a Piece of green Baize, which being cut to the

6 F

Shape

June. Shape of the Glafs, is to be let over it from Ten in the Morning to Five in the Afternoon, if the Flowers be open to so much of the Sun. This is always to be used in bright Weather; but when it is cloudy, the Air being more freely admitted is an Advantage.

The Glasses must be supported at a moderate Height above the Flowers, that they may not choak them; nor, on the other Hand, admit the Dews too freely under them: and the Flower must be kept at such a Distance from the Stick, to which the Stem is tyed up, that it may spread out freely, and not touch it.

From Time to Time let them be watered, and they will thus be brought into Bloom, in a Manner that promises long Duration.

This Week is a very proper Time for inoculating some of the delicate Kinds of Roses, which do not freely produce Suckers.

The fittest Stocks are those which will shoot the most freely, and of all these the *Francfort* Rose is the best. The *Damask* may be used, and some

other of the free Shooters, but there is none better than the first we have named. It is of little Value else, for the Flowers seldom open well; but it communicates nothing of that Property to the new Kind, tho' it gives all the expected Advantage of free Shooting.

The yellow Rose is very proper to be budded on the *Francfort* Kind; and when planted in a clear Air, and good Exposure, will open its double Flowers in Perfection.

The Cleanness of the Shoots in this *Francfort* Kind, is one considerable Advantage; for the Roses of these fine Sorts are very tender to inoculate, and every one knows, in such Cases, how important it is to have a good smooth and even Stock: for the rest, the common Care of Inoculation, and nothing more, is required. The Evening of a cloudy Day is best for the Purpose; and a great deal of Care must be used in cutting off the Buds, and fixing them according to the Methods we have directed.



S E C T. II.

The Management of the NURSEY this Week.

THIS Week it will be proper to inoculate some of the earlier Peaches and Nectarines. Those Fruits are nearly allied to one another, and the same Stock serves for both. They may be very well propagated upon the Muske Plum and the white Pear Plum, but the best is the green Gauge.

These Stocks may be raised either from the Stones or from Layers; but, to speak from Experience, those from Stones are better. The Green Gauge Stock suits much better than any different Tree for these; but the finest Fruits of all will be produced by rebudding them upon the vigorous and healthy Kinds of Peaches. Those upon the Plum Stocks are perhaps the longer lived Trees; but these bear the best Fruit, and of the truest Flavour.

The Stalks should be of two Years Growth when they are budded, and the great Article is a good Choice of the Cuttings: these must be taken from Trees of the Kind desired to be propagated, and from such as are in themselves healthy, vigorous, remarkable for bearing a large Quantity of Fruit, and such as is well flavoured, and has in Perfection all the Marks and Characters of the Kind.

Let the Evening of a cloudy Day be chosen for the Purpose; and every thing being prepared for the Work, as we have directed under a former Instance, let no more Cuttings be taken off, than can be used at that Time: and let all the Expedition be made in doing it, that is consistent with the necessary Care and Exactness.

Five and Twenty Days after the Operation, is the Time for examining which have taken, and which not. Those which then appear plump and fair, may be trusted as having succeeded, and the Bandage must be loosened to prevent Strangulation.

The following Spring the Stock must be cut off a Finger's Length above the Bud, and the Shoot rising from the Bud must then be tied up to this Part of the Stock that is left above, to secure it from Accidents.

When the Trees are to be planted out into the Garden, a proper Soil must be prepared for the Borders, and they must be allowed a good Distance. Neither of these Articles are sufficiently observed, and 'tis for that Reason our Fruit in general in *England*, is much inferior to what it is capable of being in our Climate.

The Breadth of the Border is the great Article; for though the Roots will run under Gravel-Walks, and even into the Ground beyond, yet it is in the Border itself they find their great Nourishment, and spread their numerous useful Fibres.

The Breadth of this should be proportioned to the intended Height of the Tree: the greater Quantity of Wood is to be nourished, the more should be the Compass. It is a good general Rule, when the Trees are intended to be planted at moderate Distances, to allow the Breadth of the Border to be equal to the Height of the Wall.

June.

If the Soil be naturally tough and clayey, it will be necessary to throw in at the Bottom some Rubbish, or Brickbats, to carry off the Wet; and on the other hand, if the Bottom be naturally too loose and open, it will be adviseable, at a due Depth, to lay in some Clay to prevent the Moisture from running off from the Roots too fast. In either Case the Mould should be dug out a Spade and half deep; and the Bottom being made according to the Nature of the Ground, the Compost should be laid in, and raised eight Inches above the common Level.

This should be made in the following Manner: take up some rich Pasture Mould with the Turf, and add to every Load of it two Bushels of Pigeon's Dung, one Bushel of Lime, and one and a half of Wood Soot.

Let these be well mix'd together by frequent

Turnings; and when the Turf is all rotted among the Ingredients, it will be fit to use. June.

The proper Depth of this in the Border is a Spade and half below the Surface, and about eight Inches above it: but this must be more or less according to the Nature of the Ground: the moister the Place is, the higher the Border must be raised; for a great Article is keeping the Roots dry.

One Thing more is of Importance, which is the preventing their rooting too deep; and this will be effectually done by the Bottoms we have order'd to be laid in, which ever kind is used.

Thus much being understood, the Gardener will know what he is to do, and what to expect in his planting of Fruit Trees: and these Preparations being made, we shall in the succeeding Weeks inform him what he is to do farther.



S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

LET the Gardener continue this Week the Management of all Wall and Espalier Trees, as directed in the preceding Numbers, rubbing off those Shoots that appear in wrong Places; and training those to the Wall, or Rail, that come out in a proper Direction. They will thus be prevented from shading the Fruit too much, and all will go on regularly.

In the Wall Trees there should be little Violence used with them at present, long Loops, and loose nailing will be sufficient; and they may be reduced more perfectly to order afterwards.

In the Espaliers, instead of Osier Twigs, the best binding is Bais soaked in Water; and the tying should be loose at present, and brought tighter afterwards.

By this Management of the Espalier the Fruit will ripen upon it very well; and of whatever Kind it is, the free Passage of the Air between the Branches will give it the true Flavour of its Kind.

The original of the Espalier was on this Account: Fruit Trees, whose Branches naturally hang down, were found much injured by their galling each other; and as they in this Kind of Growth crowded, and hung over one another, the Fruit was little in Quantity, and ill tasted.

This put judicious Gardeners in mind of giving such Boughs a Support, and that naturally produced the Espalier; for a regular Framework was better suited to this Purpose than any other Form; and Trees so supported, made a kind of Hedge that look'd agreeable, and took up little Room in the Garden, while it separated the Walks and Quarters, and produced excellent Fruit.

This Origin of the Contrivance let the Gar-

deners always remember; and he will manage his Trees, of whatsoever Kind, properly.

Branches kept at due Distance, and well supported, have all the Advantage requisite to many Kinds of Fruit: they have Distance, Sun and Air; and whatever Species require nothing more, are as fit for Espaliers as for Walls. They should always be train'd to these, that the Walls may be reserved for those Kinds, which being Natives of warmer Climates, require more Heat.

We have mention'd some beside the common Kinds, that are very well suited to the Purpose, and given the Method of pruning them. As to the common Sorts, few Directions will serve.

The fittest Pears for Espaliers are those upon Quince Stocks. They should be raised with a double Stem; and their Branches, as they will this Way have no great Length, may be the more numerous: but if any of them shoot to a greater Length than half the Distance between the Stems before they bear, it will in that Case be best to reduce the Tree to one Stem.

It will be always an Advantage to the young Espaliers, to let the Trees loose from the Frame toward Winter, that they may have the Benefit of thorough Air, and of the Dews, before the Time of pruning and fastening up again.

Apples for Espaliers should be propagated upon Paradise, Creeper, or Codling Stocks; those on Crab Stocks are altogether improper for this Service.

Filberds make a very good Espalier, and they will bear to be planted closer than the other Kinds.

They no way produce their Fruit in greater Perfection.



SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

THIS Week will be a very proper Time for planting out those sweet Herbs that have been raised from Seed, and are yet in the first Beds.

For this Purpose a Piece of Ground must be well dug, and the Mould broke fine.

The Seedlings must be planted out by Lines drawn lengthwise and across the Bed, at different Distances according to their various Sizes. They should have good Room allow'd for growing, and they must be water'd and shaded till they have taken root.

The common Mistake in the Management of these, is planting them too close; but unless they are allow'd a due Distance, they will not have their true Vigour, or full Flavour.

Nor is there any Thing gain'd by thus crowding them together: for a Bed of any given Measure, will yield a larger Quantity for cutting, from a small Number of Plants that have the proper Scope, than from a larger, which starve and choak up one another.

Young Salletting is in less Repute now the larger Kinds are in Season; but it may be rais'd in as great Perfection at this Time as in any other. Those who chuse it should have it sown once in six Days for a Succession, for it soon grows too large for Use.

The Chardoons will now be fit for planting out in the Places where they are to be blanch'd, and good Preparation must be made for them. A Piece of Ground must be chosen of sufficient

Extent, and it must be very thoroughly dug up two Spades deep.

On this Lines must be drawn at a Yard and half asunder, lengthways and across; and the Plants regularly let into these at equal Distances, one in the Centre of every Square: there will thus be Opportunity to earth them up as they grow, and they will attain a great Height and Delicacy.

The Time of saving Seeds from many of the Kitchen Garden Products is now come; and let the careful Gardener here imitate, in some degree, what we have directed for the Florist.

Let them always stand upon the Plants till well harden'd; and then be thrown upon a Mat, or Cloth, in an airy Room to dry in their Pods for some Time, before they are rub'd out of them.

When clear'd from the Husks, let them again be thin spread out several Days; and they will thus get that perfect hardening, which will render them fit for keeping or sowing, according to their several Natures.

Let those Parts of the Ground which require weeding, be very thoroughly clear'd; and let the Crops, when freed from that Incumbrance, be water'd; they will grow more in two Days after this, than in a Week before.

Finally, let the Gardener pick up all Kinds of Vermin with Care, for it is the Time of many of the Kinds breeding.

EDEN:

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R XLI.

For the last Week in JUNE.

S E C T I O N I.

F L O R A, or the P L E A S U R E - G A R D E N.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. The NONPAREIL DAFFODIL.

June.
Pl. 41.
Fig. 1.

WE have described to the Gardener many valuable Daffodils, but there yet remain two or three others, which by proper Management are capable of being kept to this late Season; and thence acquire a new Value. The present Species is one. It was early distinguished by the Writers on Plants; and obtained, from its great Size and fine Colouring, very honourable Names: the *Incomparable*, the *Nonpareil*, and the *excellent Daffodil*.

The *Latin* Authors have called it *Narcissus maximus*, and *omnium maximus*, the greatest Daffodil: and C. BAUHINE, *Narcissus latifolius pallidus, calyce amplo*: Broad-leaved pale Daffodil, with a great Cup.

LINNÆUS, who has reduced under a very few Heads the several Daffodils, allows this elegant Flower no more than the Distinction of a Variety: he refers it to the common or bastard Daffodil, which he names *Narcissus spatula uniflora, Nectaris limbo rotato, campanulato erecto, patulo equale*: One-flowered Daffodil, with the Verge of the Nectarium rotated and bell-shaped, erect, open and equal.

The Root is bulbous, oblong, formed of numerous Coats, and full of a slimy Juice.

The Leaves are oblong, broad, obtuse, of a Numb. XLI.

greyish green Colour, and firm Substance. There usually rise about three of these from one Root, and with them a firm and upright Stalk, two Foot high, naked, and of the same pale greyish green Colour; and at the Top stands a single Flower.

It is at first enclosed in an oblong Scabbard, filmy, and of a pale green: this bursts sideways, to let out the Flower, and soon after withers.

The Flower is composed, as in the other Daffodils, of six Petals and a Nectarium, called from its Form, the Cup of the Flower. This is small at the Bottom, and wider all the Way to the Top, where it is very elegantly dented and sinuated.

The Petals rise from its Outside toward the Base, and are oblong, obtuse, and plain. The Cup and Petals are proportioned to one another; both very large. The Colour in both is yellow, but the Petals have the Tinct pale, and in the Cup it is deeper.

Within the Cup stand six Filaments, fixed to its Inside, and crowned with oblong Buttons; and in the Centre rises a Style, single, and crowned with a three-parted Top.

The six Filaments shew it one of the *Hexandria* of LINNÆUS; the single Style one of the *Monogynia*.

6 G

June.

The

June. The Style rises from a rounded Rudiment under the Receptacle of the Flower, which afterwards ripens into a roundish Seed-vessel, with three Ridges; containing, in three Cells, numerous round Seeds, with a small Appendage; and a columnar Receptacle.

Culture of this NARCISSUS.

We have said it is a Creature of the Gardener's Art; and the same Management which first raised, must preserve, and may improve it.

The Seeds which ripen freely, should be sown in the Manner we have directed for the other *Narcissus's*; and the young Plants treated with the same Care. They will shew a great deal of Va-

riety: some Flowers will be larger, others smaller; some better coloured, others worse; and there will be some double, or at the least semi-double.

These must be separated (the largest and best coloured, with the double and semi-double Flowers) into a Bed by themselves; the others planted to supply Vacancies, and give Variety in common Borders.

From the Seeds of the semi-double there may always be raised perfectly double Flowers, and these, as well as the finest of the single, may be afterwards encreased by Off-sets. The Manner of doing it is in nothing particular: the whole Management must be the same as in the other *Narcissus's*.

June.

2. HAIRY CURASSO PURSLAIN.

Pl. 41.
Fig. 2.

The Singularity of this Plant, and its pleasing Irregularity of Growth, have a Right to stand in the Place of a more gaudy Beauty. The Use of such in Collections is very proper and very great: they promote the Study of Botany, and mix Curiosity with Elegance.

The old Writers could not be acquainted with this, for it is native only of Countries discovered since their Time: but most who have written on the *American* Plants have named it.

The Characters of Purslain are so plainly marked on it, that none have referred it to any other Genus, but they have described it under various Additions. *PLUKENET* calls it *Portulaca lanuginosa procumbens, vermiculata foliis Americana*; and *COMMELINE*, *Portulaca Curassavica, angustolongo, lucidoque folio procumbens*: Purslain of *Curasso*, with long, shining narrow Leaves.

LINNAEUS, more accurate in his Distinctions, calls it *Portulaca foliis subulatis alternis, axillis pilosis, floribus sessilibus*: Alternate subulate-leaved Purslain, with hairy Angles, and Flowers without Footstalks.

The Root is composed of many long white Fibres.

The Stalks are numerous, weak, glossy, lightly hairy, and thrown about in various Directions; some upright, some oblique, some lying on the Ground.

Their Colour is naturally a pale green; but they are often stained with purple.

The Leaves are numerous, and placed alternately: they are long, narrow, sharp-pointed; of a pale but fresh and pleasing green, and glossy as the Stalks.

The Flowers terminate the Stalks, and often rise also from the Bosoms of the Leaves, sometimes singly, sometimes two or three together.

They are not large, but very conspicuous from their Position and Colour; they stick close by the Bases to the Stalk, and they are of a very delicate Crimson. Round about those which terminate the Stalks, there stand eight or more Leaves, like the others in Form, but disposed as

the Rays of a Star; and about the Bases of these, and in the Angles made by the others with the Stalk, there is usually a light Cottony Matter.

Each Flower has its Cup: this is small, formed of a single Piece, split into two Parts, and compressed at the Top: it stands upon the Rudiment of the Seed-vessel, and remains with it.

The Flower itself is composed of five plain, erect, and obtuse Petals, and in the Midst stand numerous short capillary Filaments, with simple Buttons.

From the Rudiment of the Fruit rises a single short Style, crown'd with a Head, divided to the Base into five Parts.

The Seed-vessel is oval, and the Seeds are numerous and small.

The Number of the Filaments is properly twelve, but in this there is great Uncertainty, usually they are more. Fifteen is a very common Number; and this being in a ternate Ratio to the Divisions of the Head, appears very natural. *LINNAEUS* has however placed it among the *Dodecandria*; and the single Style refers it to the first Division of that Class, the *Monogynia*.

Culture of this PURSLAIN.

It is a Native of *South America*, an Annual, and requires some Care in its Management: but it deserves the Pains. The Flowers, tho' small, are pretty, the Colour of the Petals is very fine, the Buttons are yellow, and the Heads of the Style purple; and there is therefore a pleasing Variety.

The Seeds must be sowed when ripe, and in *February* sowed in a Pot of rich Garden-Mould, plunged to the Rim in a Bark-Bed.

When the Plants rise they must be thined, and afterwards two or three of the fairest may be planted out into separate Pots, which must be removed into the Stove, and there treated in common with other Plants, suffering them to grow their own Way; in which some of the Branches will fall down, and cover the whole Pot.

3. AMETHYSTINE MUSCARI.

Pl. 41.
Fig. 3.

We call this Flower by its received Name, but are to tell the Gardener that it is properly a *Hyacinth*: the essential Characters are all the same with those of that Genus; the Difference is nothing but that the Flower is globular; and this slight Variation in Form, LINNÆUS does not admit as a Generical Distinction.

So long as we have cultivated Flowers this has had a Place in our Gardens, and all who have written on Plants have described it. Those have added it to the Number of *Hyacinths*, who have preserved the Name *Muscari* without the other; but the more Correct have called it by the proper Term.

C. BAUHINE calls it *Hyacinthus racemosus moschatus*: the musky racemous *Hyacinth*: And LINNÆUS, *Hyacinthus corollis ovatis*: the *Hyacinth*, with oval Flowers. They have led themselves into Confusion, who have attempted to distinguish it into several Species from the Colour of the Flower, for there is no Plant in which that is so variable.

The Root is large, round, white, composed of numerous Coats, and hung about at the Bottom with many, thick, and permanent Fibres.

The Leaves are long, considerably broad, obtuse at the End, thick, and of a pale green; hollowed a little, striated, and thrown upon the Ground in various Directions. When they first appear, they have often a Stain of shining Crimson, but it goes off as they encrease in Bigness.

The Stalk is naked, round, very thick, yet weak, and of a pale Colour, stained more or less with red.

The Flowers stand in a Spike, covering it from the Top half way down; and they are oval and hollow, largest at the Base, small at the Neck, and spreading a little again at the Mouth.

Their Colour we have observed is very variable; and in the several Stages of the same Flower, it never fails to change considerably. In the yellow Kind the Gradation is this:

The Flowers at their first Appearance are of a pale whitish Olive; as they grow to Perfection they attain a more and more agreeable yellow; and in their State of Decay, they are blackish.

In some Plants the Flowers are of a perfect and unstained White; in others, of a delicate bloody Red, or Crimson: the Amethyst, or the Burgundy Colour, is seen in others; and in the most common of all, the Colour is a dull Purple tinged with Green: this has more of the Green while the Flowers are young, and the Colour afterwards becomes of the Violet Hue.

In all these States the Plant is very agreeable. The Fragrance is greatest when the Flowers are past their full Bloom; and it is most delicate in the amethystine Flowers, but the strongest in the yellow ones.

There is no Cup to the Flower; and it is composed of a single Petal. The Rim is divided lightly into six Segments; and at the Top of the

Rudiment are seen three Openings: these are the Nectaria.

The Filaments are six; they are short, and the Antheræ are convergent. The Style is shorter than the Flower, single, and crowned with an obtuse Head. The Seed-vessel is three-cornered, and contains about six Seeds, in three distinct Cells.

The six Filaments shew the Plant one of the *Hexandria* of LINNÆUS, and the single Style refers it to the *Monogynia*.

Culture of this HYACINTH.

It is a Native of *Asia*, but has been more than two hundred Years brought into our Gardens. It is a very hardy Plant; and because it will grow freely, has been too much neglected. The Size and bright Colouring of the Flower are the Articles of its Value, and these may be greatly encreased by a right Management.

In its native Country it loves a deep light Soil, and never thrives so well as when under the Shade of a Thicket: this we should imitate in Gardens.

The best Compost for it is thus made:

Pasture Earth two Bushels, Pond Mud a Bushel, and Wood-Pile Earth and old Cow-dung of each a Peck.

Let these be mixed in Spring, and in *July* they will be fit for Use.

The common Way of propagating the Plant is by Off-sets, they encrease abundantly, and grow freely; this is therefore the easy Method, but the best is to do it from Seed.

Let this ripen upon a healthy and strong Plant: let it be gathered and hardened, as we have directed on other Occasions, and in the End of *August* sown.

If only Off-sets are used, let a Bed be made up in the Garden in *July*, and some good ones planted, at ten Inches Distance.

If the Seeds be saved, a shaded Part of the Nursery must be chosen, the Compost thrown in, and the Seeds scattered on, and covered a Quarter of an Inch. They must be managed as other seedling bulbous Plants, but being hardy they will require less Trouble.

When they come to Flower the best must be separated, and planted in the Garden in a Bed of the same Compost; and from the finest of these must be saved Seeds for another Sowing.

The Flowers produced from these, will shew all that Variety of Colouring we have named, and will be much larger than what are usually seen: nor can the Gardener get the *Musk Hyacinth* in Perfection any other Way.

When some Roots of the finest Kinds are thus obtained, they must be managed with due Care, and they will preserve themselves in Perfection, and afford numerous Off-sets. Every Year they must be taken up, when the Flower-stalks and
Leaves

June. Leaves are decayed; and the Off-sets being separated, the old Roots must be planted again in fresh Compost.

The Off-sets will be small, and they should be planted one Year in a Nursery Bed, and after that be distributed in various Parts of the Garden.

June.

4. ÆTHIOPIAN ADONIS.

Pl. 41.
Fig. 4.

The Botanical Writers have not been long acquainted with this Plant; nor have those who first met with it well understood its Characters. Till LINNÆUS, none found its proper Genus: it has been referred by almost every Author who named it, to a different one.

BOERHAAVE and BURMAN call it an *Aflæa* and *Christaphoriana*: COMMELINE, an *Æthiopian Ranunculus*; and our PLUKENET, an *Imperatoria*. So much Resemblance of the *Crowfoot* Kind those also distinguished in it, who called it by the most foreign Generical Names, that they in general added *Ranunculoides*.

LINNÆUS, who refers it to the proper Head, *Adonis*, adds, as its Distinction, from the others, *fructibus depressis, foliis duplicato ternatis, ovatis serratis: Adonis*, with duplicately ternate Leaves, oval and ferrated, and with depressed Fruit.

The Root is composed of numerous white Fibres, connected to a small Head.

The first Leaves are supported on long firm whitish Footstalks, and each is composed of three Parts, each Part of three lesser Leaves, or sometimes more than that Number.

The natural Division of the Footstalk is thus into three Parts, and the natural Number of Leaves on each of these is three; but sometimes there are five, and sometimes they are in the whole fewer; the two Side Divisions having only two Leaves, and the middle one three. Thus the whole radical Leaf, when perfect, consists of nine smaller Leaves; when imperfect, of seven; and when redundant, of thirteen. In either Case it is very handsome.

The separate Leaves are of a firm Substance, of an oval Figure, notched irregularly at the Edges, and of a blackish green.

The Stalk is round, firm, branched, and eight Inches high. The larger Leaves toward the lower Part of this are placed in Three's, and are of the

same dark green with those from the Root; on the upper Part of the Stalk and on the Branches, they are irregularly placed, and narrow.

The Flowers terminate all the Branches, in large Numbers, and they are of a faint yellow, with a Tinge of greenish.

The Cup is composed of five little oval, hollowed, and fading Leaves, of a yellowish Colour. The Body of the Flower is formed of an uncertain Number of Petals, from five to fifteen, according to the Age of the Plant, and various Accidents of Growth: they are obtuse, and stand open. In the Midst there are numerous short Filaments; and in the Middle of these a Cluster of Rudiments of Seeds: these have no Styles, but each its proper Head, which is pointed and bent back.

The Filaments rise from the Receptacle of the Flower; and this, with their Number, shews the Plant to be one of the *Polyandria*: the numerous Rudiments refer it also to the *Polygynia*, the last Subdivision under that general Head.

Culture of this ADONIS.

It is a Native of the warmest Parts of *Africa*, and with us cannot be raised but by the Assistance of artificial Heat. The Seeds must be sown in *February*, in a Pot of common Garden-Mould, and raised in a Bark Bed, with those of other Plants of the same warm Countries.

Two or three of the strongest must be saved, and planted out in separate Pots, and afterwards brought into the Stove.

The Method we have delivered before; and the Trouble is little, when we consider that nothing is done particularly for these Plants, but they are raised in common among others of more Beauty and Value.

5. GREY STARRY HYACINTH.

Pl. 41.
Fig. 5.

The Gardener has been told, on a preceding Occasion, that the Starry Hyacinths are properly of the Squil Kind. When we have acquainted him that the common Names of this Species are, *Ilycinthus stellaris flore cineritio*, and *Hyacinthus stellaris multiflorus cineritius*, we are to add, that LINNÆUS referring it to its proper Head, *Scilla*, adds, as the Character of the Species, *ra-*

dice solida, corymbo conferto hæmisphærico: Solid-rooted Squil, with a clustered and rounded Head of Flowers.

The Root is roundish and white, and is hung with many Fibres at the Base.

The Leaves are numerous, long, moderately broad, striated, and of a faint green.

The Stalk is round, thick, of a pale green, and



The Nonpareil Daffodill



Hairy Curasoo Purslain



Amethystine Muscari



Ethiopian Adonis.



Grey Starry Hyacinth



Broad leaved Portugal Iris.

June. and naked. The Flowers are numerous, and they crown the Top in a broad Tuft.

Their Colour is a very delicate pearly grey: the coarse Language of our common Writers names it ash Colour; and the Smell is very delicate.

There is no Cup to the Flower.

Its Body is composed of six oval Petals, which stand expanded in the Manner of Rays of a Star. Within stand six short Filaments with oblong incumbent Burtons; and in their Centre from a roundish Rudiment, rises a simple Style of the Length of the Filaments, and crown'd with a single Head.

The six Filaments shew the Plant to be one of the *Hexandria* of LINNÆUS, and the single Style refers it to the *Monogynia*.

Few of the Genera of Plants have been more confounded than the Hyacinth; few Instances shew more strongly than that, the slight and imperfect Regard they had to the real, essential, and I must say also, obvious Characters, impressed by Nature in the Flowers of Plants, who first arranged and disposed them for the Student.

We see in this Instance a Plant altogether different from the Hyacinths join'd with them under the same Name. Its Flower composed of six Petals, and that of the Hyacinth of one, could not be received as a Distinction; and yet the same Authors who joined this to the Hyacinth, separated the proper Species of that Genus into different imaginary ones, under as many distinct Names. They allowed the Term Hyacinth only when the Body of the Flower was tubular and oblong; when shorter and more swollen at the Base, they erected a new Genus, under the Name *Muscari*, and so of the others. 'Tis to LINNÆUS we owe the fixing of what are, and what are not general Characters, and the just Distribution.

Culture of this HYACINTH.

We do not know with Certainty the Native Country of this elegant Flower. BESLER calls it *Italian*, and many follow him; but they mistake his Sense, who suppose he meant that it was wild in *Italy*. He found it there first in Gardens. It has been very long familiar in our own, and the Culture is easy: but let not this be an Occasion of neglecting it: the Gardener who shall bestow

a proper Attention in raising it from Seeds, and adapt a right Soil, and often enough renew it, will raise the Flower to a Degree of Beauty they never saw who have only been used to it treated in the common Method.

Let the Compost be made for it thus:

Mix a Barrow of rich Meadow Earth with a Bushel of Wood-pile Mould, a Peck of Fowls Dung, and two Pecks of Sand; throw this up in a Heap in Autumn, and let it lie till the Autumn following.

When the Plants are in Bloom, mark one of those for Seed which has numerous large Flowers, a firm Stalk, and not too many Leaves.

Let the Seed from these be saved with the Cautions we have given on like Occasions; and in *August* a Bed in the Nursery open to the South East being made up with this Compost, let the Seeds be sown upon it.

The young Plants are to be treated in the same Manner as the other bulbous Kinds; and when brought to flower, the Seeds of some of the finest thus raised, are to be sown in the same Manner. Thus will be obtain'd from the second Sowing, the most perfect Flowers this elegant Plant is capable of producing; and these Roots are to be propagated farther by Off-sets.

The Bed in which these are planted must be of the same Compost, and it must be renewed every Year.

The Roots must always be taken up as soon as the Stalks and Leaves are faded; and their Off-sets taken away at that Time. This is a very needful Caution; because if they are left on, they will make the Plant flower weak the succeeding Year. They are too small to flower themselves when taken off annually, but they will encrease to the full as well in a Nursery Bed as with the Parent Plant. Therefore the true Conduct is to separate them every Year, and to plant them in the Nursery; from whence a Parcel may thus be every successive Year taken out for the Garden; while at the same Time the original Roots are kept clear, and the whole Strength of Nature is given to their flowering.

This is a Method proper to be observed in many others, as well as this Hyacinth; and will be a Way at once to encrease the Number, and keep the old Stock in Perfection.

6. BROAD-LEAVED PORTUGAL IRIS.

Pl. 41. Fig. 6. The Family of the *Iris*'s is very extensive: Nature has given a great Number of Species; and the Varieties of these added by Art, are altogether innumerable. This is a very elegant Kind, originally distinct, and very different from the others in its whole Form.

The Authors who have written of Flowers have named it; and none of those who have

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given Histories of the *European* Plants have omitted its Description.

CLUSIUS names it the first among the Dwarf *Iris*'s, *Chamaeiris*; C. BAUHINE calls it *Chamaeiris variegata*; and others, *Iris humilis latifolia flore violaceo*: low broad leaved *Iris*, with a Violet colour'd Flower.

LINNÆUS, more distinct in his Names, calls it,

6 H

Iris

June. *Iris corollis barbata caulcm uniflorum superantibus* : bearded Iris with one Flower, and broad Leaves rising above the Stalks.

The Root is thick, tuberous, long, and white; it spreads under the Surface, and is of an acrid Taste.

The Leaves are numerous, broad, and short; they rise many together, and are of a deep but somewhat blueish green; of a firm Substance, and mark'd with three or four longitudinal Ribs.

The Stalk rises in the Midst of these, and is about two Inches high; roundish, irregular, knotted, and cover'd in part with some slight Membranes.

On its Top stands one beautiful and very conspicuous Flower: it is of the same Form with that of the common Flower-de-luce; and its natural Colour is a fine Violet blue, but sometimes it is variegated with yellow; in various Degrees and Forms, and often with great Elegance.

There is no Cup to the Flower; and it is form'd as in the others, of six Petals; three of which stand erect, and three turn back. These all are united at their Bases; and in their Centre rises a short Style, crown'd at its Top with three leafy Divisions. They hang in a wild and fantastical Manner, and resemble three additional Petals; this is common to the rest of the Iris's.

The Number of the Filaments refers the Plant to the *Triandria*, the third Class in the LINNÆAN System; and the single Style to the *Monogynia*.

The Divisions of the Head, tho' very large, are not counted; but the Body of the Style on all Occasions, where there is any; and this there evidently is in the present Instance, tho' it be short.

The Iris's like the Hyacinths have been idly divided by Authors into different Genera. When the Leaves are subulated, and the Root a single Bulb, they have had the Name of *Xiphium*; when the Bulb is double, or the Root, as in several Instances, is composed of two Bulbs, the one lying upon the other: the Name given has been *Sisyrinchium*.

When the Root is tuberous, and the Leaves square, the Name has been *Hermodactylus*; and when the Leaves are Sword-like, and the Root fleshy and creeping, these Authors have given the Name *Iris*.

TOURNEFORT has led all the common Writers into that Error; but at this more improved Time of Science, all these false Distinctions are rejected. The Characters of Genera are to be sought only in the Flowers of Plants: these are the same in the Flowers of all these Kinds; therefore the Difference of Roots and Leaves, are to be consider'd as nothing more than Distinctions of Species.

Thus LINNÆUS has determin'd, who has join'd the *Xiphium*, *Sisyrinchium*, and *Hermodactylus* of that Author, under the common Name *Iris*, with the Plants usually distinguish'd by the same Appellation; bringing together all the other as united by Nature, and allowing these Characters what they really are, distinctive Marks of Species, and nothing more.

Culture of this IRIS.

June.

The Plant is a Native of *Portugal*, and some other Parts of *Europe*, where it thrives best on the rocky Sides of Hills; and where there is little Mould, but that very rich and delicate. This must give the Gardener the Rule for its Culture. In Nature are laid the Foundations of his Art, and he will always succeed in Proportion to the Attention which he shews them.

The Advantages of this Plants growing in rocky and confined Situations are very conspicuous. When there chance to be Roots of it in full Ground, near the Sides of Rivers, as is not unfrequently the Case, the Flowers are always of a simple tho' strong blue; but when it has less Earth and more Sun in those rocky Situations we have named, the Flower varies extremely: there are Streaks and Spots of yellow, white, and Flesh Colour; and in Variety, tho' not in Lustre, it exceeds all we see of it in Gardens.

Beside this Mixture of Colouring in the Flower, it has in those Situations also frequently another pleasing Variation, of which some other of the Iris's are capable; this is the staining of the Leaves with yellow and with white. It gives a most pleasing Aspect to the Plant, because the Leaves are more conspicuous than in many others that have this accidental Tinge, and 'tis a Thing we should labour to introduce into the Garden.

Nature is to be followed in this as in the preceding Instances; and he who would imitate judiciously what she does, must observe the Way in which she does it.

Let him for this Plant make up a rich Compost, and save Seeds with Care. Let him mix a Bushel of Garden Mould, with the same Quantity of Earth from under a Wood-pile, and three Pecks of Cow Dung; with a Quart of Sand, two Quarts of Soot, and two Ounces of Sea Salt. Let this lie six Months exposed to the Air in a Heap, often turn'd; and then add to it a Peck of Lime, fresh made. Let it be well wrought together, and turn'd often; and thus let it lie half a Year longer.

The best Time to make the first Mixture is Autumn; then in Spring the Lime may be added, and in the Autumn following the Compost will be fit for the Reception of the Seeds.

This Particularity and Time in the preparing of Composts, will seem to the common Sale Gardener an idle Business; the waste of much Time, and a kind of Trouble which no Price for the Flowers can answer. 'Tis not to him we give the Directions: we may once for all remind him that one light Compost may serve in the Place of another; and that common Garden Mould will support most Plants.

He who is to sell his Roots at a limited Price, can allow them only a proportion'd Degree of Culture: but there are those whose own Satisfaction is the sole End of raising them: to these the Labour is an Amusement; and they will think no Trouble too much that will enrich their Store.

With respect to the others; we believe if they would

June. would allow themselves to be at the Pains of raising better Flowers, they would have a better Price for them; but however that be, to the Curious who cultivate them for themselves, no Attention is troublesome; and where a Gardener is paid for his Labour, he is not to grudge the Manner in which it is employ'd.

To those who would pursue this pleasing Art to its full Perfection, we mark out the true Path; there must be almost as many Composts as Kinds. Every Plant has its favourite natural Soil: that should be studied and imitated; and it is only by that Means each can be brought, with all the Labour possible to be employ'd about them, to due Perfection.

To those who chuse to propagate the little *Iris*, named here only in the common Way, a short and easy Method may be proposed.

The parted Roots will grow in common Garden Mould, and the Gardener needs trouble himself no farther. Plants like that from which the Roots were obtain'd, will thus rise upon the Borders; and he will have no Censure, nor no Praise. To him who would enrich his Garden with the highest Improvements of what can be done upon the Plan of Nature, the separate Composts are the true Method; and for the present Plant this we have named.

The Method of using which is this:

Let a vigorous Plant of this *Iris* be mark'd for Seed; and encouraged to ripen it well by all the Methods we have laid down on that Head on former Occasions.

Let the Ground be cleared about it while in Flower, and frequently dug up with a Trowel at due Distance.

Let the Stalk be tied up to a short Stick, and allow frequent and slight Waterings.

When the Seed-vessel has been thus brought to its full Bigness, desist from Watering, and let it harden in the Air. Cut it off when hard, and lay it in an airy Room, on a Shelf: break it when it has lain there a Week; then let the separated Seeds lie a Fortnight to harden, and prepare for sowing them.

Chuse two or three broad, and not very deep earthen Pans. Cover the Bottoms with Chips of Free-stone, having first bored two Holes in each to let out abundant Water. Then pour in as much of the Compost as will lie four Inches thick. Scatter the Seeds over this with an even Hand, and let them lie at one Inch Distance or thereabout. Sift over them half an Inch of the same Compost, and then give a light and gentle Watering.

Set these Pans in a Place where they may have the Morning Sun; and from time to time examine the Mould that it do not grow too dry: give Waterings when required, but always very moderate.

In *October* set the Pans in a Place where they may have the Morning Sun; and from time to time examine the Mould that it do not grow too dry: give Waterings when required, but always very moderate.

In *October* set the Pans where they may have

the full Noon Sun, and thus let them stand through the Winter: in *April* they must be removed to their former Place; and from this Time they must be managed as we have directed for other seedling Flowers.

The Plants must be thin'd where they rise too close; and when the young Leaves fade, there must be a Quarter of an Inch of Mould sifted over them. Weeds must be kept off, and Moss; and from time to time such Waterings must be allow'd, as will give them full Power of Vegetation.

When they are strong enough to be transplanted for the first Time, a Bed must be made for the Generality of them, of the same Compost, with Chips of Stone in the same Manner thrown underneath; and a few of the choicest of them must be planted out into separate Pots.

These must be small, there must be several Chips of Stone in the same Manner thrown into them, and the Mould over these: the Roots must be planted at a very small Depth; half an Inch is the full Covering they should be allow'd at first; and this is too much for them, but we allow for the Effects of Watering; which, if ever so gently done, will always take off a little.

Let the Plants in the Bed be weeded and watered, and these in the Pots exposed to the Morning Sun, but never to that of Noon. At Autumn let a little Mould be sifted over them, for they will require to be more cover'd in Winter than Summer; and thus let them be brought to flower.

There will be found many with variegated Flowers both in the Bed and in the Pots: but those in the Pots will be the finest; and there is a fair Chance, tho' not a Certainty, that some of these will have striped Leaves.

The Confinement of the Pot is very serviceable to a Plant which Nature fixes where there is little Room: and if the expected Advantage be lost in one sowing, it must be attempted in another.

When a Plant of the variegated Kind is found, it is to be treated only as the other favourite Flowers of this sowing: every one of which should be taken out of the common Ground, and planted in a small Pot. Stones should be laid in, not only under the Mould, but mix'd among it to stop the spreading of the Roots; and thus the Plant will be kept in its natural Condition of growing.

Every Summer when the flowering is over, and the Leaves are faded, the Roots must be taken up and parted. The Partings may be planted in the Borders; but the Roots preserved in the Pots must never be suffered to grow too large.

Every Time it is taken up fresh Compost must be used; and throughout all the Growth, there must be continued the Care of giving it the Morning Sun, and defending it from the Blaze of Noon.

After two or three Years the Plants will be fully establish'd, and the Gardener will be able to judge perfectly of the Merit of the several Flowers.

From

June. From two or three of the best of those in the Pots let him now save Seeds; and raise a fresh Stock of Plants in the same Manner: these will not fail to be an Improvement upon the others; and thus he who chuses to devote some Hours from Year to Year to this elegant Amusement, will from Period to Period improve his

June. Stock. After two or three Successions, he will be able to shew the common Gardener the Reward of his Attention: he will produce Flowers from this Iris, which will be conceived by such a one to be a new Kind. Many who pretend to the Art, will not be brought to believe it can perform so much as he will see on this Occasion.



C H A P. II.

The Care and Management of the Ground.

THE Flower Garden may at this Time be consider'd as containing three different Series of Plants. 1. Those in Flower. 2. Those whose Bloom is past, and which are left for Seed; and, 3. Such as are growing up to Perfection for the Autumn.

According to this Distinction the Gardener is to understand the Business of the present Week. There are some Things they all require in common, others which must be suited to the particular Condition of each.

Weeding is of the first Kind: they all require this, and let it be done carefully. The Hoe is a dangerous Instrument at this Time in any Hand; and most in the unskilful.

The Planting of the Borders does not allow such Distance in the Plantation as should admit the Spade, therefore every Thing in this Matter must be now done by Hand; and none should be employ'd but such as are careful.

We will not suppose a Garden at this Time of the Year so neglected, that the Weeds can be run up to the Height of the cultivated Plants; and there are no young ones at this Season brought into the Ground. The Danger therefore is not of pulling up the flowering Plants with the Weeds; but an ignorant and careless Person may shake out the Seeds from those the Gardener has nursed up to that State with the utmost Care; and destroy all his Expectations.

When the Beds are carefully and perfectly weeded, every Plant will shew itself distinctly; and let him now manage them according to their several Kinds and Conditions.

Let him first look over those in flower. Let him take off such Flowers as are past their Beauty; and give these Plants every Evening a gentle Watering, not only on the Ground, but over the Leaves.

This done, let him examine those which are ripening their Seeds. If any new Bloom offers upon these, let him take it off. The Flowers at this Time will never be fine, yet they will starve and hurt the Seed. Let him stir the Mould all about the Plants with a Trowel; and if the Seed be young, let him allow gentle Waterings, but those Plants which have it full grown must have none.

In these and the others, let him see that the Sticks to which they are tied up, stand firm and secure: and then let him pass to those autumnal Kinds which are now coming to their Growth, and preparing for flowering. Part of these are the Annuals which have been removed out of the Hot-beds, and part the seedling Biennials of the last Autumn from the Nursery.

The Care is to be the same in both Kinds; for whether raised in Hot-beds, or the open Air, they have now been long enough kept in the free Weather to bear the same Regulations. Sticks according to our Directions have been thrust down by these, proportion'd to the Heights of the Plants when they come to flowering. As they have risen above the last Tyings, let them be now fasten'd up again.

The right Management in this Respect of tying up, is to do it often, and at small Distances; and the Stalk should always be brought near the Stick, but never pressed to it.

Let the Gardener take Care to use green Worsted, not Bais; that being of the Colour of the Plant it may be less seen; and never let him leave any dangling Ends.

There is nothing so useful as the keeping up the Stalks of Plants strait while growing, and firm, from the Effect of the Wind, but there is a great Slovenliness in the usual Way of doing it.

At this Time if there be any straggling Branches, which disgrace the Growth of the Plant, let them be removed; and when thus brought to order, let it have a full, free Watering, Leaves, Buds, and Soil. Thus treating every one in this State of Growth, they will have the full Advantage of their Kind and Culture.

If any of them are full grown, let the Head of the Stick be cut off to the Level of their Top Branches: for the Art is to preserve the Plant upright in its Growth, and yet to conceal the Means by which it is done; and a rough End of a Stake standing up above the Plant at once betrays this, and disgusts the Eye. Care must be taken in the cutting off this Top of the Stick; for if it be attempted hastily, and with a dull Knife, the Stick will be shook, and the Plant with it: for its Stalk is thus tied up often, and the whole Plant must feel any Violence done to it.

When

June.

When this is done, let a little Earth be drawn up about the Stem, and the Plant is in Perfection for flowering. So long as the Buds remain unopened, the Waterings must be large, and they should be given all over the Plant; but when the Flowers open they must be more moderate in Quantity, and given with greater Care.

The general Rule is this:

A Plant in flower should be watered as often as one in the Bud, but less should be allowed at a Time: for the Buds themselves are vastly favoured by the Water coming upon them before they begin to disclose the Petals of the Flower, yet when that begins to open, this Method must not be suffered any more.

In single Flowers, the Water coming upon them when blown, will wash the Dust of the Buttons upon the Petals, and by that Means spoil the Colour of both: and in double Flowers some Drops of it will always lodge among the Foldings of those multiplied Petals, which will rot the Receptacle, or the Bases of the Petals, and the Flower will fade before its Time.

In those Plants which are intended to stand for Seed, the Article of Watering while in Flower must be more strictly regarded than in all others, for the Ripening of the Seed depends in a great Measure upon the regular shedding of the Dust from those Heads; and this cannot fail to be interrupted by washing them, in this Way of Watering.

Seeds will sometimes ripen under great Disadvantages: but even tho' they ripen under them, they will be affected by them: they will acquire their full Growth and Form, but the Principle of Vegetation will be weak.

This would be a great Hurt to the Florist who should fix upon such a Plant for Seed; and unless the Method of watering upon the Flowers be utterly abolished, there cannot easily be any Security against it; for he makes his Choice of those Plants that are to stand for Seed when the Flowers are full blown; and this Damage is often done while they are opening.

For this Reason, and in Consideration of the Beauty of the Flower, there should be an invariable Rule, never to water the Top of a Plant when the Flowers are opened. It will be easy for a judicious Hand, with a good Pot, to throw the Water in among the Leaves and Branches of a Plant, without letting any touch the Head, or other Parts where the Flowers are placed.

This is the true Method of watering Plants in flower; and this, according to their Kinds and natural Place of Growth, and according to the Season, should be repeated every Evening, one Hour before Sun-set, all the Time they are in flower.

This Care being taken of those Flowers which bear Culture in the open Ground, let our Gardener look to his Greenhouse Plants which are now set out for Summer; and into the Stove.

Let him stir the Earth on the Surface in all the Pots; and, where there is Occasion, bring in a little from some Compost suited to the Nature of the Plant, spreading it over the Surface, and ga-

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June.

thering it up about the Stem. This done, let them pick off all dead or decaying Leaves, rub and wash away any Foulness upon their Stems, and even upon the Leaves of those Kinds which have large ones; and according to the Condition and Nature of the Plants, let them have the Benefit of Watering.

In these several Articles, which are all necessary to the Welfare of the Plants, let Discretion guide the Gardener; and let him set it down here, as well as in other Instances, as an everlasting Rule, That it is better to do too little, than too much; tho' he never should neglect to do something.

For Instance: in the stirring of the Earth about the Roots of these Plants, let a great deal of Care be taken not to wound or too much disturb them. Our own Natives will bear very rude Usage, as we see in the Autumnal Management of fibrous-rooted Plants; but these, which are all of them Natives of milder Climates, are much more tender, and more easily hurt.

The Point of a Trowel is commonly used for this Purpose of stirring the Earth at the Surface of the Pots and Tubs; but it would be easy to invent a more proper Instrument. The three-pronged Fork, used for digging up the Borders in which Fruit Trees grow, would be a good Model: such a Thing made in Miniature, with the Tongs blunt at the Points and Edges, would be the best of all Tools for such a Purpose: this would stir the Mould without wounding the Roots; and if it raised any of the small Parts with the Soil which covered them, they would get no Harm by it, because their Bark would not be wounded. They would fall regularly in the Pot again; and the small Covering of new Mould would preserve them from the Injuries of the Air till they had taken good Root again.

With this Instrument, or with whatever other Kind the Gardener uses, he must observe this Caution: first let him consider whether the Plant be one whose Root is fibrous, or tuberous; whether it be one that shoots deep, or spreads under the Surface; and let him proportion the Depth to which he removes, or stirs the Earth accordingly.

In all these Cases, it will be an Advantage to the Plant to remove as much of the old Earth as can be safely taken off; and to this Purpose some fresh Soil from one of the Heaps of Compost must be brought to the Place before the Work is begun, that it may be immediately laid in upon removing the other.

The Method I have found most successful in doing this useful Business, is this:

After chusing the Compost from such a Heap as was either made purposely for the Plant, or is of a Nature suited to it, I move the Earth gently to such Depth as it can be done without Injury to the Roots: then with my Fingers draw this off to one Side, and pour it out of the Pot. Instantly I put in as much of the Compost as supplies the Place of what was taken away; and then give a gentle Watering, with Water that has stood all Day in the Sun. This fixes and settles the new Mould about the Ends of the Roots; and upon this Quantity thus wetted, I throw a little more Mould.

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June. The next Morning I draw up some about the Stem, and thus the whole Operation is finished. Experience has shewn me this is the true Method; and the present Week is a very proper Season.

This done to the Plants in general, the Orange Kind, which is the principal Glory of a common Conservatory, will require a particular Attention. The great Beauty of this Tree is when loaded with Fruit; and in this unfavourable Climate there is no Method of attaining that Excellence, but by a due and timely Attention.

A great Part of the Oranges produced on our Trees, fall off during Winter; and 'tis very rare that the best of them attain their due Growth. These fine Products are not enough regarded: we must remind the Gardener, that to succeed better he must allow them much more Care. The Rules of his Art are universal: those we have laid down for the more common Fruit Trees will answer equally well for these. We shall only shew how he is to apply them.

The Danger of Fruits falling off is most while it is youngest; therefore the better Growth the Oranges attain before Winter, the more likely they will be to stand thro' that Season.

The Orange Tree gets into Flower early, and its first Bloom is to be managed for Fruit. To this Purpose, when the Blossoms stand too close, let him take some off. This thinning of them will strengthen the rest; and as soon as the Fruit is set, they must be thined again.

By this Time, those Fruit which followed the first Flowers will have a fair Aspect, and he should carefully examine them. Let him leave as many as can have Room to grow to their Bigness; and the taking off the rest will encourage these to a more free Growth.

On those Trees which he sees will ripen the most and best Fruit, he must be content to have no more Flowers.

We have just directed, that when Flowers break out upon a Plant that is ripening its Seed, they should always be destroyed; and the same Rule should hold here.

Whatever Buds offer for Flowering upon those Trees which are thus managed for Fruit, should be pulled off as soon as seen. It is too late to nurse them up for Fruit, for they would be in great Hazard of falling off in the Winter; and in the mean time the Growth of these Blossoms

will retard that of the other Fruit.

When they are not suffered to open, the whole Effort of Nature is to ripen the Fruit; and when the Fruit has been set thus early, and is managed with this Care, the whole Store, or very near the whole, will ripen.

In the mean time, as the Flowers of the Orange are very beautiful as well as fragrant, some other Trees of them should be suffered to remain in the usual Manner. These will yield Abundance of Flowers, and the Approach of Winter will shew the Merit of the other Management for Fruit; for the Tree treated as we here direct, will be loaded with thriving Oranges, while these which have been left to Nature, and have exhausted themselves in flowering, will have very few that stand half the Winter.

This Care taken of the Greenhouse Plants, let the Gardener look with a careful Eye over those in the Stove. We have told him how necessary Cleanliness is in this Article; and there is no Time of the whole Year when he is so carefully to attend to it as now.

The Stove Plants will be more subject at this than any other Season, to Filth upon their Stems, and Insects upon their tender Shoots and Leaves: the Heat and Moisture of the Air contribute, and the Season favours them.

A Sponge and warm Water must be used, and if the Disorder be great, the Water must be impregnated with Tobacco Stalks and Soot; every Part must be cleaned with this; the young Shoots and Leaves with the Sponge, and the Stems with a small Brush first, and afterwards with a Flannel dipt in the same Water. This opens the Pores of the Plant, which are as necessary to Vegetables as to Animals; and it will be seen to thrive in a particular Manner after it.

If this be now neglected, the Mischief will soon spread itself from one Plant to another. What begun in the Bark-Bed will be continued throughout every Part of the Stove, and the Mischief which might easily have been stopped, while it was only upon two or three Plants, will give the Gardener a great deal of Trouble now it is universal; and after all this several of the Plants will be absolutely destroyed, and many more greatly injured by it.

Two Days Pains this Week may save the Labour of Months hereafter.

June.

S E C T. II.

The Care of the N U R S E R Y, for the present Week.

THE quick Growth of Weeds will be a great Trouble at this Season to the Gardener, in this Part of his Ground. This is a kind of second Spring in that Respect; and if Showers fall this Week, and the preceding, they will cover

the Ground now as fast as in *April*.

Among the Weeds as well as Flowers, there are the Vernal and Autumnal Kinds; the first are now past, but the latter are in their most hasty State of Growth; Sow-thistles, Nightshade, and the innumerable

June. numerable and unconquerable Train of *Atriplex's* now shoot up for Flower; and the whole Labour of the Spring must be repeated to extirpate them.

In the Seed-Beds this Work is tedious, for it must all be done by Hand; but it is in no Part so necessary: the Number and quick Growth of these wild Crops will starve and choak the Seedlings, if neglected, in a very few Days.

In the more advanced Growths the Hoe is to be used, and it will make quick Riddance: but 'tis among the larger and distant Plantations that most Good of all will be done, for these admit the Spade.

Fewer Weeds rise among these Trees of more advanced Growth; but none should be suffered.

The whole Ground should this Week be dug up, and the Clots well broke, and this will answer the Purpose of destroying Weeds most effectually, at the same Time that it gives a vigorous Growth to the Plantation.

June. If the Season be dry, as it often is at this Time, Waterings, though troublesome, must not be omitted: these will be most required on the Seed-Beds, because the young Trees there are so slightly rooted, that the Sun's Rays would burn them up through the Mould.

In the transplanted Kinds less will be required, though some should be allowed; but in the larger Growths, if the Spade have gone its full Depth, there will scarce need any. Their own Branches shade the Ground, and in some Degree prevent its parching up: the breaking of the Mould also serves in the Place of this Refreshment of Water, for it makes it detain the Dews.

When the young Plantations are too much exposed to the Sun, they must be shaded by a Reed-Hedge, and, in Proportion, watered more than the others: this will bring them well through the present Season; and they will afterwards require much less Attention than if they had been neglected during the present Danger.



S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

C H A P. I.

Fruits in Season.

OUR last Catalogue added early Cherries to two or three Kinds of early Apricots and Peaches. We can at present add but slowly to them; but next Month will encrease the Number abundantly.

With the Strawberries and early black and white Cherries, there will now come two or three more Kinds; and from the Forcing Frames Grapes and Plums. There will remain the Ruffets of two or three Kinds from the last Year's Stores, and two or three Pippins. The Gooseberries will

begin to ripen in common Ground, and in favourable Situations it will not be difficult to add a Plate of them to the Table.

The Gardener should take the Opportunity of gathering these early, for they have no other Value: they are too common to be regarded when other Fruits come in; but when there is a Scarcity of those, and these come before their usual Time, they may very well be admitted at the best Tables.

C H A P. II.

The Care and Management of Fruit-Trees this Week.

LET the Gardener now every Day look over his Trees of Wall-Fruit: there is no laborious Work to be done in this Quarter; but without the most strict Attention, all the Pains of an earlier Time will be rendered fruitless.

Let him keep the Trees in Order, defend the Fruit from Injuries, and preserve it from Vermin and all Kinds of Devourers.

All that is needful on the first Head, is the continuing his Care in rubbing off foreright Shoots, and training and keeping in their Places those which he has suffered to remain from more proper Parts of the Wood.

With Regard to the defending of the Fruit, the great Article will be in preserving the Leaves which grow about them. These serve the excellent Purposes of drawing Nourishment to the Part where the Fruit grows, and defending it from the Sun.

If any Insects appear upon these, let them be as carefully picked off, as if they came upon the Fruit itself. If no Care can preserve the Leaves, let him supply their Place by others renewed from Time to Time.

If the Fruit by any accidental Loss of Leaves be at this Time too much exposed to the Sun, it will grow loose in the Skin; and either perish entirely, or never acquire its full Bigness, or true Flavour.

In this Case let the Gardener, when he has used all Arts in vain, to preserve the Leaves that were about it, consider whether he can bring any to shade it from another Part where they are not wanted. If this can be done, the Branch to which the Fruit owes this new Shade, must be saved in the right Position by nailing; and if nothing of this kind can be done, let the Gardener from Day to Day bring the Leaves of some other

June. other Tree, and fix them so as to shade the Fruit from the full Sun of Noon. This is but a poor Expedient, but it is all that Art can do, and it is much better than entire Neglect.

If the Fruit be of a late Kind, the Trouble will be too much for the Advantage; but if it be of a Kind that is to ripen early, this will answer so far as to be very well worth while. Neither this Addition of foreign Leaves, nor the shading the Fruit with those from some other Part of the same Tree, answer the absolute Purpose of Nature: for the original Leaves draw Nourishment, as well as give Shade; but if both cannot

be attain'd, one is something. The Leaves I have found succeed best are the Laurel; because they are of a firm Substance, and do not soon decay.

The last Care for the present Week is the looking after Vermin; Snails must be destroy'd in their Holes by Day, and when they crawl out of them at Evening, and at early Morning; and Nests of Ants should also be fought after, and destroyed.

To this Care of the Fruit should be added a Digging and Watering of the Ground; and the Stems of the Trees should be kept perfectly clean from Moss.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

CHAP. I.

Products in Season.

THE List of these encreases every Day; and indeed there are few of the Products of the Kitchen Ground, that with due Care, are not in Season now. Cucumbers continue excellent, and some better Melons than those of the Beginning of the Month may be had. Asparagus yet continues, and there is no Time when Cauliflowers are in greater Perfection.

The second Crop of Pease is now in Order, and Beans are never in finer Condition: there are also good Artichokes, Carrots; and Turneps are also fine; and Salletting in its full Glory. The Cos Lettice is in perfect Order; and those who love Variety so well as to admit small Salletting among the rest, may have it, with the Management we have directed, as perfect as at early Spring.

CHAP. II.

Care and Management of the Ground.

LET a Couple of Pieces of Ground be dug up, and prepared for Celeri and Endive; and let the Gardener who has studied his Business according to these Directions we lay down, prepare for both in a judicious Manner.

Dung is necessary in the Kitchen Ground on some Occasions, but it is an Error to use it on all. In the present Instance it is altogether hurtful; it spoils the Taste of both these Plants, and it makes their blanch'd Part subject to be eaten by Worms.

Few know the Virtues of fresh Land; and fewer still the Difference in Taste between those Plants which are produced by Dung, and those of the same Kind by means only of an unexhausted Earth. The Fact is, that fresh Mould will produce the finest Herbage: but when it has been exhausted by successive Crops, some Enrichment is required; and 'tis Dung that generally is used.

In the present Case it is not needed: both these Crops will succeed better; be whiter, tenderer, and finer tasted by far without it.

When the Pieces of Ground are fixed upon for this Service, let the Gardener go into a rich, dry Pasture; and take from under the Turf as much Mould as will cover them four Inches deep.

Let him throw this upon the Pieces, rake it level, and draw off any large Stems, and then

tread it down that it may dig well in. Let him then turn up the whole a full Spades Depth; and take Care to break and mix the Mould very well in.

Then let him draw Lines lengthway and across for the Endive; bringing in the Plants, and putting them into the Ground with due Care, and at a fair Distance.

For the Celeri there requires more Management. This Piece is to be mark'd out by Lines only lengthway, and thrown up in Drills for the Plants.

The allowing a due Distance between these, as also between Plant and Plant, is the only Way of having the Growth in Perfection; but in the Kitchen Grounds where these Things are raised to supply the Markets, this cannot be expected. The Rent of Ground is too high; and the more Space is allowed to the Plants, the more Labour they take in the Management; for if the whole Ground be not dug up, the Room is useless.

Sand added to the Ground where Celeri is to be blanch'd, is useful also according to the Nature of the Soil; but this Addition of Pasture Earth answers every Way the best at this Season: it does not render the same Piece unfit for other Crops; and in the Gentleman's Kitchen Garden there is generally Room enough.

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COMPLEAT BODY OF GARDENING.

N U M B E R XLII.

For the first Week in JULY.

S E C T I O N I.

FLORA, or the PLEASURE-GARDEN.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. ROSEBAY WILLOW HERB.

July.

Pl. 42.
Fig. 1.

THE Garden does not afford a Plant more specious and elegant than this, although it be a Native of our own Country. It is not so common wild as to put the Vulgar in mind of calling it a Weed in Gardens; and those who have Judgment, despise the little Prejudices which represent every Thing as mean that comes easily.

The Culture of a native *English* Plant can give the Gardener but little Trouble; and he will easily be able to raise it to a yet more consummate Beauty.

The Writers on Plants all name, and celebrate it. They call it *Rosebay Willow Herb*, from its Resemblance to the *Rosebay*, *Oleander*, one of the finest Garden Shrubs; and in their various Names, have generally added some Epithet of Praise. *Lyfimachia speciosa*, is a very common Name for it; and beside the peculiar Title *Chamaenerion*, which several have given it who yet retain'd it among the *Lyfimachias*'s; others have called it *Onagra*.

LINNAEUS, who restored Order and Method in the Science, separating the many unlike Plants, which his Predecessors had joined under the Name *Lyfimachia*, into different Genera; and indeed different Classes; for so Nature distributed them, although ill-judging Art in earlier

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Times joined them together, ranges this and the other podded Species separately under the Name *Epilobium*: he adds as the Distinction of this, *foliis sparsis lineari-lanceolatis*: *Epilobium* with scattered; narrow, but somewhat lanceolated Leaves.

The Distinction this Author establish'd among these Plants has been found very happy: those who in earlier Time saw the Differences, did not perceive rightly wherein they consisted; and hence, while their specific Names were unartful, and indistinct; they often enumerated Varieties as Species, while they in other Articles confounded really distinct Species together.

C. BAUHINE has mentioned a broad leaved *Rosebay Willow Herb*, and a Dwarf Alpine Kind; but these are only accidental Variations: the Plant is the same in these, and in the more usual State; and beside the obvious Difference from all other Kinds in the Elegance of the Flowers, and Form of the Leaves, it is distinctly characterised by their Disposition.

In some of the *Willow Herbs* the Leaves stand opposite, or in Pairs; in others they are placed in a regular alternate Order; in this Species they are wildly scattered upon the Stalk; and afford not only a Mark of Distinction, but a very singular Beauty.

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The whole Plant is indeed in the highest Degree pleasing, even to an incurious Eye, in Form, Growth, and Colouring.

The Root is white, long, and thick, and runs a great Way under the Surface.

The Stalk is firm, nobly erect, well coloured, and eight Foot high. It is round, lightly ridged; of a pale green, stain'd with crimson in various Proportions, and full of a white Pith.

It runs up strait as a Spear, and single from the Root; seldom unless when it has been hurt by Accidents, sending out any Side Branches. From the Bottom to the Place where the Flowers begin to rise, it is thick set with Leaves. These stand in the wild Way already described; and they are long, narrow, and of a firm Substance.

Their Colour on the upper Side is a dark, but not unpleasing green; and on the under Part a silvery grey. This discloses itself to the Eye in a Thousand Forms as the Leaves rise in their irregular Manner, and are moved by the Wind: the middle Rib also on the upper Side is conspicuous, and of a paler Colour than the rest of the Leaf. They are sharp pointed, and undivided at the Edges; or if accidentally there appear a few Indentings in the Leaves of a luxuriant Plant, these are altogether slight and casual.

The grey Colour of the under Part of the Leaf varies also greatly in degree according to the Soil, and other Accidents; but it is one of those Articles the Gardener should use all his Art to preserve in high Perfection, for it is no common Beauty.

The Flowers crown the Top of the Stalk in a Spike of a Yard long: they are disposed in the same wild and irregular Manner with the Leaves; and they blow in a long Succession: but where the Plant thrives well, there are always such a Number of them open together, as make a very glorious Appearance. From the full blown ones at the Bottom the Eye is naturally carried up to the Buds; which, as more or less opened by a gradual Disclosure, run up to the Top as a Pyramid, terminating in a Point: this is the natural State of the Plant in its full Glory.

As the first blown Flowers die off, the Seed-vessels appear in their Places, and more Flowers open above them. The Appearance then is of a Spike, with Seed-vessels at the Bottom, Flowers in the Middle, and Buds at the Top; and in either Case it is very elegant.

The whole Stalk that is thus covered with Flowers is of a delicate red.

The Flowers themselves are of a fine crimson, and have white Filaments with Flesh-coloured Buttons.

The Colour of the Flower varies according to the Accidents of Growth and Vigour in the Plant, in the several Degrees of red, from Rose-colour to the deepest Crimson; but it is in all these Degrees beautiful.

The Cup is composed of four oblong pointed Leaves, and is colour'd, and of short Duration.

The Flower is composed of four expanded Petals; broad, obtuse, and nip'd at the End.

In the Midst stand eight Filaments; small

toward the Top, and crown'd with oval, compressed, obtuse Buttons: they are alternately longer and shorter.

In the Midst of these appears a single Style; the Top divided into four Parts, which turn back. This rises from the Rudiment of the Seed-vessel, which is placed below the Receptacle of the Flower; and is very long, slender, and of a greyish red. It supports the Flower in manner of a long Footstalk, and makes no inelegant Part of the Plant.

When the Flower is fallen, this becomes a long Pod, formed of four Valves, and contains in four Cells numerous small Seeds, wing'd with a long, light, cottony Matter.

The Student counting the eight Filaments in the Flower, will know the Plant belongs to the eighth Class in the LINNÆAN System; the *Oclandria*; and its single Style, places it under the first Section, the *Monogynia*.

The different Length of the Filaments he is not to regard: there are Instances in which the Characters of Classes depend upon that Particular, but this is limited to the *Didynamia* and *Tetradynamia*; and the Disproportion in those Cases is more obvious and singular. Many Plants in different Classes have the Filaments alternately longer and shorter: it is an Accident, as the Convergence, Divergence, or Declination of the Threads, in other Cases; and is very useful in characterising the Genera, but has no Right to regard in respect of classical Distinctions.

Culture of this ROSEBAY WILLOW HERB.

The Culture of a Plant wild in our Fields, the Gardener will suppose below all Direction: he will take up a Root, plant it in the Ground at random; and when it has encreased too much, he will part it. This is all: and he thinks more Care superfluous.

We shall repeat what we have said before on a like Occasion, that wild Plants should not only be preserved, but improved, when admitted into Gardens; and we shall lay down the Method at large for the Culture of this, which may be transferred to a Number of others.

Instead of parting the Roots let him raise his Plants from Seed; and let him not collect this from the ill-managed Growths in a Garden, but from those Nature feeds better in the Fields; and even these let him enrich by Garden Management.

In our Northern Counties this elegant Plant is frequent on the Sides of damp Hills, by the Edges of Springs, and principally among those loose Thickets raised by the *Opulus* and *Alder*, on the Banks of Rivers; where there is Moisture, and a deep black Soil.

There is a great Quantity of it in a Field which lies in the Way from *Hampstead Heath* to *Cane Wood*. The Soil nor Situation perfectly suit it there, but it is better than in Gardens. Thither we refer the Gardener for his Seed, and let him procure it in this Manner.

Let him select two or three of the strongest Plants,

July. Plants, and clear away all the rest for two Yards about them.

Let him cut off the Spike of each when it begins to flower, leaving only about half a Dozen of the lower Flowers, which are then open.

Let him watch the Progress of Nature from time to time; and as new Shoots for flowering appear, destroy them.

Let these Flowers only stand for Seeds; and the whole Effort of Nature being directed thither, they will be ripen'd in the most perfect Manner.

Let him watch the Time when their Pods grow dry; for they soon after burst, and the Winds would carry away his Expectations.

Let him cut them off when thus fully ripened, and lay them in an airy Room where there comes neither Sun nor Wind, to dry.

This done, let him prepare a Compost thus:

Mix equal Parts of black Meadow Earth, and Pond Mud; to a Load of this add three Bushels of Cow Dung, and one Bushel of Marle; or if that cannot be had, three Pecks of Fullers Earth. This will make a very rich, and at the same Time a cool Compost, fat and mellow; it is what the Plant loves, and it will improve in lying.

The first Quantity for the Seeds will be well mellowed by that Time it is wanted; but the Remainder will lie through the Winter, and the Frosts will perfect it for the Reception of the Plants.

When the Seeds are well dried, and the Heap of this Compost has been two or three Times turned, fix upon a cool and shaded Part of the Nursery for the Bed. Dig out the Mould a full Spade deep, and fill the Place with some of the Compost.

In the Middle of September chuse a perfectly calm Evening of a cloudy Day, and mix with the Seeds a double Handful of dry clean Sand. The common white Writing Sand is best. Rub this and the Seeds together to separate them; and then the Surface of the Bed being perfectly

levelled, scatter them on with the Sand; as even July. as possible, and not too thick.

When they are thus spread upon the Bed, sweep them about with the Surface of the Mould with a strong Hair Brush: by this Means all the Lumps will be broken. This is very essential, for according to the Degree of covering, the Seeds shoot stronger or weaker; and the Plants should rise distinct, that the weak may be taken up without hurting the others.

Sift over them a Quarter of an Inch of this Compost, and laying a Piece of a Whitethorn Bush upon the Bed, leave all to Nature.

If in the Remainder of the Autumn the Ground should grow too dry, it must have a little Water: if any Weeds appear, they must be pulled up.

In Spring the young Plants will appear, let them be weeded and watered; and when they have some Strength, let all but ten or a Dozen of the finest be pulled up.

Prepare a Bed for these in the Garden; chuse a Place that has some shade; dig out the Mould a Spade and half deep, lay in some Clay that the Moisture may be detained, and fill up with the Compost.

When the Plants left in the Seed Bed are five Inches high, open as many Holes as there are of them in this Bed at a Yard Distance, and in a cloudy Evening take them up with large Balls of Earth, and plant them: give a good Watering, and shade them till they have taken root.

After this they will require only the common Care bestowed on the other Plants: but every Autumn they must be taken up, fresh Compost must be put into the Bed, and the Roots must be reduced to a due Size, for they spread very fast. This done, they must be planted again at the same Distance, and watered when they grow toward flowering.

This Management will bring them to the highest Perfection, nor is it limited to this Plant; but with due Allowances for their Nature, suits all the fibrous rooted Kinds.

2. POETIC DAFFODIL.

Pl. 42.
Fig. 2.

The Garden does not afford, in its Kind, a prettier Plant than this; nor do we know one that has been so early, or so honourably mention'd by all Kinds of Writers. This is the Narcissus celebrated in Greek and Roman Verse: the *ναρκισσος* *νάρκισσος*, the fragrant Daffodil of THEOCRITUS, the first Flower he has placed in his *Europas Garland*; this the *ναρκισσος* of THEOPHRASTUS, which he describes with the naked Stalk, and Asphodel Leaf, but broader: this the rosy-bosom'd Daffodil, which, they say, reflected its bright Image in the clear Streams of their favourite Rivers.

'Tis from these Fathers of the Science we are to seek the true Knowledge of their Time in Plants; and while we honour the Critick who

sets right the *Asphodeloides*, we want another SCALIGER to reconcile to Reason the Colouring of the Petals.

The Name thus given to the first Narcissus, the white flower'd Kind, with the purple Cup, the less accurate Followers of these Writers transferred without Addition, to the whole Narcissus Kind.

OVID has been supposed to contradict the early Greek, when in his elegant and mournful Story he says,

*croceum pro corpore florem
inveniunt foliis medium cingentibus albis.*

But DIOSCORIDES who wrote between their Times, has reconciled this seeming Contradiction:

July.

The whole Plant is indeed in the highest Degree pleasing, even to an incurious Eye, in Form, Growth, and Colouring.

The Root is white, long, and thick, and runs a great Way under the Surface.

The Stalk is firm, nobly erect, well coloured, and eight Foot high. It is round, lightly ridged; of a pale green, stain'd with crimson in various Proportions, and full of a white Pith.

It runs up strait as a Spear, and single from the Root; seldom unless when it has been hurt by Accidents, sending out any Side Branches. From the Bottom to the Place where the Flowers begin to rise, it is thick set with Leaves. These stand in the wild Way already described; and they are long, narrow, and of a firm Substance.

Their Colour on the upper Side is a dark, but not unpleasing green; and on the under Part a silvery grey. This discloses itself to the Eye in a Thousand Forms as the Leaves rise in their irregular Manner, and are moved by the Wind: the middle Rib also on the upper Side is conspicuous, and of a paler Colour than the rest of the Leaf. They are sharp pointed, and undivided at the Edges; or if accidentally there appear a few Indentings in the Leaves of a luxuriant Plant, these are altogether slight and casual.

The grey Colour of the under Part of the Leaf varies also greatly in degree according to the Soil, and other Accidents; but it is one of those Articles the Gardener should use all his Art to preserve in high Perfection, for it is no common Beauty.

The Flowers crown the Top of the Stalk in a Spike of a Yard long: they are disposed in the same wild and irregular Manner with the Leaves; and they blow in a long Succession: but where the Plant thrives well, there are always such a Number of them open together, as make a very glorious Appearance. From the full blown ones at the Bottom the Eye is naturally carried up to the Buds; which, as more or less opened by a gradual Disclosure, run up to the Top as a Pyramid, terminating in a Point: this is the natural State of the Plant in its full Glory.

As the first blown Flowers die off, the Seed-vessels appear in their Places, and more Flowers open above them. The Appearance then is of a Spike, with Seed-vessels at the Bottom, Flowers in the Middle, and Buds at the Top; and in either Case it is very elegant.

The whole Stalk that is thus covered with Flowers is of a delicate red.

The Flowers themselves are of a fine crimson, and have white Filaments with Flesh-coloured Buttons.

The Colour of the Flower varies according to the Accidents of Growth and Vigour in the Plant, in the several Degrees of red, from Rose-colour to the deepest Crimson; but it is in all these Degrees beautiful.

The Cup is composed of four oblong pointed Leaves, and is colour'd, and of short Duration.

The Flower is composed of four expanded Petals; broad, obtuse, and nip'd at the End.

In the Midst stand eight Filaments; small

toward the Top, and crown'd with oval, compressed, obtuse Buttons: they are alternately longer and shorter.

In the Midst of these appears a single Style; the Top divided into four Parts, which turn back. This rises from the Rudiment of the Seed-vessel, which is placed below the Receptacle of the Flower; and is very long, slender, and of a greyish red. It supports the Flower in manner of a long Footstalk, and makes no inelegant Part of the Plant.

When the Flower is fallen, this becomes a long Pod, formed of four Valves, and contains in four Cells numerous small Seeds, wing'd with a long, light, cottony Matter.

The Student counting the eight Filaments in the Flower, will know the Plant belongs to the eighth Class in the LINNÆAN System; the *Ottandria*; and its single Style, places it under the first Section, the *Monogynia*.

The different Length of the Filaments he is not to regard: there are Instances in which the Characters of Classes depend upon that Particular, but this is limited to the *Didynamia* and *Tetradynamia*; and the Disproportion in those Cases is more obvious and singular. Many Plants in different Classes have the Filaments alternately longer and shorter: it is an Accident, as the Convergence, Divergence, or Declination of the Threads, in other Cases; and is very useful in characterising the Genera, but has no Right to regard in respect of classical Distinctions.

Culture of this ROSEBAY WILLOW HERB.

The Culture of a Plant wild in our Fields, the Gardener will suppose below all Direction: he will take up a Root, plant it in the Ground at random; and when it has encreased too much, he will part it. This is all: and he thinks more Care superfluous.

We shall repeat what we have said before on a like Occasion, that wild Plants should not only be preserved, but improved, when admitted into Gardens; and we shall lay down the Method at large for the Culture of this, which may be transferred to a Number of others.

Instead of parting the Roots let him raise his Plants from Seed; and let him not collect this from the ill-managed Growths in a Garden, but from those Nature feeds better in the Fields; and even these let him enrich by Garden Management.

In our Northern Counties this elegant Plant is frequent on the Sides of damp Hills, by the Edges of Springs, and principally among those loose Thickets raised by the *Opulus* and *Alder*, on the Banks of Rivers; where there is Moisture, and a deep black Soil.

There is a great Quantity of it in a Field which lies in the Way from *Hampstead Heath* to *Cane Wood*. The Soil nor Situation perfectly suit it there, but it is better than in Gardens. Thither we refer the Gardener for his Seed, and let him procure it in this Manner.

Let him select two or three of the strongest Plants,

July.

July. Plants, and clear away all the rest for two Yards about them.

Let him cut off the Spike of each when it begins to flower, leaving only about half a Dozen of the lower Flowers, which are then open.

Let him watch the Progress of Nature from time to time; and as new Shoots for flowering appear, destroy them.

Let these Flowers only stand for Seeds; and the whole Effort of Nature being directed thither, they will be ripen'd in the most perfect Manner.

Let him watch the Time when their Pods grow dry; for they soon after burst, and the Winds would carry away his Expectations.

Let him cut them off when thus fully ripened, and lay them in an airy Room where there comes neither Sun nor Wind, to dry.

This done, let him prepare a Compost thus:

Mix equal Parts of black Meadow Earth, and Pond Mud; to a Load of this add three Bushels of Cow Dung, and one Bushel of Marle; or if that cannot be had, three Pecks of Fullers Earth. This will make a very rich, and at the same Time a cool Compost, fat and mellow; it is what the Plant loves, and it will improve in lying.

The first Quantity for the Seeds will be well mellowed by that Time it is wanted; but the Remainder will lie through the Winter, and the Frosts will perfect it for the Reception of the Plants.

When the Seeds are well dried, and the Heap of this Compost has been two or three Times turned, fix upon a cool and shaded Part of the Nursery for the Bed. Dig out the Mould a full Spade deep, and fill the Place with some of the Compost.

In the Middle of September chuse a perfectly calm Evening of a cloudy Day, and mix with the Seeds a double Handful of dry clean Sand. The common white Writing Sand is best. Rub this and the Seeds together to separate them; and then the Surface of the Bed being perfectly

levelled, scatter them on with the Sand; as even as possible, and not too thick.

When they are thus spread upon the Bed, sweep them about with the Surface of the Mould with a strong Hair Brush: by this Means all the Lumps will be broken. This is very essential, for according to the Degree of covering, the Seeds shoot stronger or weaker; and the Plants should rise distinct, that the weak may be taken up without hurting the others.

Sift over them a Quarter of an Inch of this Compost, and laying a Piece of a Whitethorn Bush upon the Bed, leave all to Nature.

If in the Remainder of the Autumn the Ground should grow too dry, it must have a little Water: if any Weeds appear, they must be pulled up.

In Spring the young Plants will appear, let them be weeded and watered; and when they have some Strength, let all but ten or a Dozen of the finest be pulled up.

Prepare a Bed for these in the Garden; chuse a Place that has some shade; dig out the Mould a Spade and half deep, lay in some Clay that the Moisture may be detained, and fill up with the Compost.

When the Plants left in the Seed Bed are five Inches high, open as many Holes as there are of them in this Bed at a Yard Distance, and in a cloudy Evening take them up with large Balls of Earth, and plant them: give a good Watering, and shade them till they have taken root.

After this they will require only the common Care bestowed on the other Plants: but every Autumn they must be taken up, fresh Compost must be put into the Bed, and the Roots must be reduced to a due Size, for they spread very fast. This done, they must be planted again at the same Distance, and watered when they grow toward flowering.

This Management will bring them to the highest Perfection, nor is it limited to this Plant; but with due Allowances for their Nature, suits all the fibrous rooted Kinds.

2. POETIC DAFFODIL.

Pl. 42.
Fig. 2.

The Garden does not afford, in its Kind, a prettier Plant than this; nor do we know one that has been so early, or so honourably mention'd by all Kinds of Writers. This is the Narcissus celebrated in Greek and Roman Verse: the *ναρκισσος* *νιπρος*, the fragrant Daffodil of THEOCRITUS, the first Flower he has placed in his *Europas Garland*; this the *ναρκισσος* of THEOPHRASTUS, which he describes with the naked Stalk, and Asphodel Leaf, but broader: this the rosy-bosom'd Daffodil, which, they say, reflected its bright Image in the clear Streams of their favourite Rivers.

'Tis from these Fathers of the Science we are to seek the true Knowledge of their Time in Plants; and while we honour the Critick who

sets right the *Asphodeloides*, we want another SCALIGER to reconcile to Reason the Colouring of the Petals.

The Name thus given to the first Narcissus, the white flower'd Kind, with the purple Cup, the less accurate Followers of these Writers transferred without Addition, to the whole Narcissus Kind.

OVID has been supposed to contradict the early Greek, when in his elegant and mournful Story he says,

*croceum pro corpore florem
inveniunt foliis medium cingentibus albis.*

But DIOSCORIDES who wrote between their Times, has reconciled this seeming Contradiction:

July. tion; he describes the Daffodil of THEOPHRASTUS in very express Terms; and adds, regarding the Colour of the Flower, that the outer Part of Petals are white, and the inner Part or Nectarium which they called, and which the Gardener still calls, its Cup, was either purple or yellow.

Thus we see the whole explained. The first Greeks gave the Name *Narcissus* to the purple cup'd Daffodil: in after Time the Writers of the same Nation extended the Term to the yellow cup'd Kind; and OVID made an ill Choice between them. He has not fixed upon the original or purple cup'd *Narcissus*, here described, but on the yellow centred one, which we have mentioned in a former Number.

PLINY, whom it would seem Omission not to quote on this Occasion, collected variously; but what he has said strengthens (if Copyists can give Strength to the Determinations founded upon the Words of their Originals) what we have established of the true and early known *Narcissus*; he mentions indeed one with an herbaceous Cup; but this is a second and inferior Kind: the true original *Narcissus*, he says, had a white Flower with a purple Cup; and in his inartificial Way he calls it a purple Lilly.

This elegant white Daffodil with the small purple Cup, is therefore the Original first known, and so much celebrated *Narcissus* of the antient Greek Philosophers and Poets; the Theme of so much Praise, and Source of so many Fables; whose Beauty they deduced in their wild Way, from the Metamorphosis of a celebrated Youth of the same Name; which their Bucolists praises in his elegant Simplicity for Elegance and Fragrance; and which the Tragic SOPHOCLES feeds from the Dew of Heaven, the

Ο καλλιερωτος ναρκισσος ---
Θαλλει δ' ουρανοιοις ὑπ' αχνας.

They are slight Criticks who would cavil about the Time of our Plants flowering and theirs; which they say opens its elegant Bloom after the rising of *Arcturus*; that is, in *September*.

The Daffodil we describe here is later than most others, and is even called thence, by our PARKINSON and others, *Serotina*. In Greece the Season of the Daffodils we know is later.

TOURNEFORT, of all Men, is the best Authority on this Head; and he, unknowing or unthinking of this Cavil, tells us he gathered on the Banks of the *Granicus*, and about *Ephesus*, Daffodils in *December*.

This purple-bosom'd Kind, so early celebrated, the later Authors name from the Colouring of this inner Part. DODONÆUS calls it *Narcissus medio purpureus*; C. BAUHINE, *Narcissus albus*

circulo purpureo; and others in the same Manner.

July.

LINNÆUS, who rejects the Article of Colour from specific Names, calls it, *Narcissus spatha uniflora, nectarii limbo rotato, brevissimo*: Single-flowered *Narcissus*, with the Edge of the Nectarium rotated and short.

The Root is a roundish Bulb, hung at the Base with many long and considerable Fibres.

The Leaves are long, moderately broad, and of a pale but not unpleasing green.

The Stalk is naked, hollow, flattened a little, and edged; and at its Top supports a single and very elegant Flower. This naturally droops a little, and is formed, as the other Daffodils, of six Petals, with a Nectarium of a rounded Form, short, and waved at the Edge.

The Petals are Snow-white; but in the Centre of the Flower there is an elegant Crown of red, with a fringed Edge; beneath this is a white, and beneath that again a yellow Circle. This is a very elegant Disposition of the Colouring, and added to this, the Fragrance of the Flower could not fail to recommend it to all the Attention it shared of old, and will we hope still have from the judicious Gardener.

The Construction of the Flower is the same as in other Daffodils which we have described before; and its six Filaments and single Style refer it plainly to the *Hexandria*, the sixth Class of LINNÆUS, and to its first Section the *Monogynia*.

Culture of this DAFFODIL.

We need not repeat for the Culture of this Species what we have at large delivered of the other Kinds. Its Management must be the same, only that there should be an Addition of Marle to the Compost: if that cannot be had, a Mixture of Pond-Mud and Cow-Dung must be used in its Place; and when this has been exposed to the Winter's Frosts, it must be added to the rest.

The Seeds must be saved from those Plants which have the red Circle finest in the Flower, and a second Time from the finest of those which have been produced from such original Sowing. Thus the Flower will attain its greatest Perfection; and if some of the Roots be annually planted later than the others, and in a Place not much exposed to the Sun, there will be a Continuation of the Flowers a long time in full Beauty.

Every Year the Roots must be allowed a fresh Bed of Compost, for they lose their Beauty in the same Soil, if ever so well worked for them; but in this Way of Management, the White will be like Snow, and the Central Purple far spread into the Flower.

1



Rosebay Willowherb

Poetick Daffodill

The Twostag'd Martagon

Inverted Columbine

Oriental Gladiolus

Striped bulbous Iris

July.

July.

3. The TWO-STAGED MARTAGON.

Pl 42.
Fig. 3.

We have described in a preceding Number, the common *Martagon* a very elegant and fragrant Flower: this, which surpasses it far in Beauty, is no distinct Species, but one of those Varieties which Culture gives the attentive and ingenious Gardener.

The common *Martagon* we have considered there at large; and have observed that instead of the Names imperial and musky *Martagon*, *Martagon imperiale*, and *Lilium pyramidale moschatum*. LINNÆUS calls it *Lilium foliis verticillatis, floribus reflexis, corollis revolutis*: Verticillate-leaved Lilly, with drooping Flowers, whose Petals turn up.

Those who chuse to distinguish this Variety by a peculiar Name, may call it the *Imperial Martagon*, with a divided Spike.

The Root is larger than in the other Kind; proportioned to the Plant. It is composed of numerous Scales, and has several thick Fibres.

The Stalk is round, very firm, perfectly upright, and more than a Yard high. Its Colour is naturally a dusky green, and it is stained in various Degrees with purple.

The Leaves are broad, short, and of a deep green, with high Veins on the under Part. There are usually four or five Circles of them round the Stalk, at different Distances; and toward the Top two or three loose, irregular, and smaller Leaves narrower, and of another Form.

The Flowers are extremely numerous and elegant, and they are disposed in a pyramidal but interrupted Spike. At some considerable Distance above the uppermost Leaves, there rise a Cluster of them on long Footstalks: these surround the Stalk, and form a kind of circular Crown. Above these it is for some Space naked, and then begins another Series of Flowers, forming a compleat Spike to the Top.

Sometimes the Stages will be three or more; but in those Cases the Distinction is less obvious; and this is on all Accounts the finest Condition. The Flowers in Shape resemble perfectly those of the common *Martagon*. They have no Cup; each is formed of six thick Petals, which turn back and curl up, and in the Centre rise six Filaments, with a single Style.

The Colouring little differs; but what there is of Variation in this Respect is to the Advantage of the present Kind. The Ground-Colour is a pale fleshy Crimson, and the Spots are frequent,

and of a perfect Blood-colour. The Buttons on the six Threads are also of a fine bright Crimson, and add not a little to the Beauty of the Flower. The Scent is musky sweet, but very strong.

Culture of this MARTAGON.

Culture without the Intention of the Gardener first produced this elegant Variety, and nothing is more precarious than its Propagation.

The Plant itself, which is a Native of *Europe*, will flourish with little Care or Trouble in our Borders; and this will be produced among the rest, when raised from Seed chosen as we have directed, and managed with the Care we advise to be bestowed on the imperial Kind.

When such a Flower is produced, more than ordinary Care must be taken of it, and of its Off-sets. No Change must be made in the Soil, but it must be allowed a sufficient Quantity.

Nothing should stand within three Foot of such a Plant; the Stalk should be firmly secured by a Stake, and frequent Tyeing; and the Space of Ground devoted to its Nourishment, must be often stirred, and oftener watered.

In this Manner the Plant is to be brought to Flower, and it will be proper to save Seed from it. To this Purpose, the upper Spike of Flowers should be cut off before they blow, and only the Crown or lower Circle left to perfect themselves and their Seed.

This will be strong and vigorous in the highest Degree, and will be the more likely to re-produce the two-staged Kind; however that be, no Seed is likely to produce so fine Flowers of the usual Sort.

In the Year 1755 I had one of these two-staged *Martagons* with snow-white Flowers, spotted with Purple. A very elegant as well as singular Plant.

These are the Varieties that rise from sowing bulbous Flowers; they are the great Glory and great Reward of the Florist; and one or other of them is frequently appearing when the true Methods are used.

Those who call themselves Florists in *England*, devote their Cares and Attention to two or three Kinds: they should make the Labour universal, for the Success will always be answerable to it; and the more Flowers they sow, the more Chance they will have for these new Appearances.

4. INVERTED COLUMBINE.

Pl. 42.
Fig. 4.

We had Occasion to name in a late Number, a Columbine whose Flowers discard the common Character of the Genus, the *Nectaria* or *Horns*. In this which we describe in the present Chapter, those singular Parts are sufficiently conspicuous, but they are disposed in a Manner contrary to their N^o 42.

natural Arrangement; they bend up to the Stalk in that, in this they point from it.

The first Notice of the Flower speaks it of an unnatural Form, and the Gardeners have not amiss named it the *Inverted Columbine*.

'Tis not a distinct Species from the common
6 L Kind,

July. Kind, but one of those innumerable Varieties which rise from well ripened and well managed Seeds.

The old Writers have described it under the Name of *Aquilegia invertis corniculis*; and *Aquilegia multiplici flore inverso*: the inverted-leaved *Columbine*, and the double inverted *Columbine*.

The Origin is from the common simple *Columbine*, wild in some Parts of this Kingdom, and throughout the rest of *Europe*, and little regarded now in Gardens. No Plant gives the Florist more Field for Variation; for the Forms and Colours of the Flowers are almost endless.

LINNÆUS refers all these, the great double and the great single, the degenerate, the rosy, the starry, and this inverted Kind, to the common *Columbine*, which he distinguishes by the Addition of *corniculis incurvis*; the *Columbine* with the Horns bent inwards: and in the Flower in that natural State only, as seen in the wild or common single *Columbine*, the Characters are to be traced.

This inverted Kind is of the same Stature with the common, and, unless for the Difference in the Flowers, of the same Form.

The Root is composed of numerous Fibres, hung to a long and firm Head.

The Leaves are supported on long slender but firm Footstalks, of a redish Colour, and are composed of many Divisions, placed in Three's: these separate Parts are obtuse, and of a blueish green.

The Stalk is two Foot high, purplish, tolerably firm, but slender.

Several Leaves stand irregularly on it, resembling those from the Root; and at the Top it divides into many Branches.

The Flowers are large, double, and very beautiful: their Colour varies extremely; they are blue, red or white, and often pyebald, or mixed of two of those Colours in a very pleasing Manner.

They are thick set with curled and rounded Parts, and their Nectaria or Horns stand forward; the Flower appears fixed to its Footstalk by the wrong End, and this Singularity adds to the Elegance.

We have had Occasion before to refer the Student to the simple *Columbine* for the Classical Characters: that with five Petals, and five horned Nectaria, has numerous Filaments fixed to the Receptacle, and five Rudiments with their Styles:

the Plant therefore belongs to the *Polyandria Pentagynia* of LINNÆUS. July.

Culture of this COLUMBINE.

As the *Columbine* is a Native of our Country, there will be no Danger of its suffering by Frosts or Exposure: the Seeds will raise it if sown ever so carelessly; but, with due Management, the Plants will be vastly improved and varied.

All that we have named as belonging to the same original Stock, will rise one time or other from the same Seeds; but let these be saved, and sown with Judgment.

Several of the double *Columbines* ripen Seeds as perfectly as the single; and 'tis from some of these it should be saved.

Let the Gardener mark for this Purpose, two or three Plants which have the largest and fairest Flowers: and from those save the Seed, as we have directed on former Occasions.

When this is thoroughly hardened, let it be sown in the Nursery; and as the Plants come up, let them be weeded, watered, thined, and every way assisted in their Growth: and when they have once flowered, let them be brought into the Garden.

The Variety is endless that will thus rise from one Parcel of Seed collected from one Plant; there will be single and double, rosy, starry, and inverted, perfect and degenerate Flowers: in Colour there will be all the Shades of blue, white, and red; and all the Colours that can be derived from various Mixtures of these; among the rest there will be some variegated, streaked, clouded and spotted: these are the finest, and from these Seeds should be afterwards saved.

These numerous Varieties ought to recommend the Plant to the Gardener; nor is there a little Regard due to its Form and Time of Flowering.

This Season is a kind of middle Space between the Spring and Autumn Flowers, and there are fewer particular to it than to either of the others. A bushy Plant which produces Abundance of Bloom at such a Time, is therefore valuable.

We do not enough regard it; and 'tis more strange yet, that the Plant does not appear to have been known to the *Greeks* and *Romans*: it has no Name in the Language of the first, nor is that which we call the *Latin* one, of real *Latin* Origin.

5. ORIENTAL GLADIOLE.

Pl. 42.
Fig. 5.

This is a Plant well recommended by its large and specious Flowers, and worthy a Place in every Garden: nor is the Culture difficult.

The Bigness of the Flowers, their Disposition, and their Colour, are the great Distinction of this from the common Kind which we have

named before. To the Gardener these are very essential Distinctions: but our Botanical Student knows that in the Eye of Science there are none. He will consider the Plant therefore as deduced from the common *Gladiolus*; and while he admires its Beauty, know its Origin.

The

July.

The old Authors have described it under the Names of *Gladiolus Byzantinus*, and *Gladiolus major Byzantinus*.

LINNÆUS refering it to the original Species calls it, *Gladiolus foliis ensiformibus floribus distantibus*: Sword-leaved Gladiole, with distant Flowers.

The Root is small and tender, composed of two Bulbs placed one above the other, and wrap'd up in several Coats.

The Leaves are long, narrow, firm, sharp-pointed, and edged; their Colour is a fine fresh green, and they rise with great Regularity.

The Stalk is slender, weak, and of a paler green: it is two Foot and a half high, and always bends more or less toward the Top. It rises among a Cluster of the Leaves, and has a few of the same Kind, but shorter upon it.

The Flowers form a kind of Spike half the Length of the Stalk; they are very large, and of a deep but beautiful purple. The better the Culture of the Plant, the larger and the deeper colour'd will be the Flowers. I have seen them

almost black, but not the less beautiful.

July.

Their Structure is the same as in the common *Gladiole*: six Petals unite at their Bases into a short crooked Tube, and there rise within, three Filaments and a single Style; the Plant is refer'd by these Characters to the *Triandria Monogynia* of LINNÆUS.

Culture of this GLADIOLÉ.

We have given the Management of another Kind of this Plant, and there requires no distinct Care for this.

In saving the Seeds regard must be had to the Size of the Flowers, and their Colour. The largest and the darkest are the best. They must be raised as the others; but when brought into the Garden some Regard should be had to their native Climate; and a warmer Spot chosen for them. With this Regulation they will flower as regularly and as beautifully as the others; and they have a farther Value, that they come in later.

6. STRIPED BULBOUS IRIS.

Pl. 42.
Fig. 6.

This is an *Iris* that very well deserves its Place in the best Gardens: it is hardy enough to bear all Seasons, and inferior to none in Beauty.

The old Authors have all described the Plant: they call it, *Iris bulbosa versicolor*, and *Iris bulbosa flore ceruleo & albo versicolor*: the changeable, and blue and white changeable bulbous *Iris*.

LINNÆUS, who does not admit these Variations in Colouring as any Marks to distinguish Species, calls it, *Iris foliis margine conniventibus, corollis imberbibus*: beardless *Iris*, with the Leaves closing at their Edges.

The Root is bulbous, small, white, and enclosed in several Membranes.

The Leaves rise five or six together; and they are long, narrow, and of a fresh green; they are hollowed, and their Edges often come together, and the Point is sharp.

The Stalk is round, thick, jointed, and surrounded by several strait Leaves, of a paler green than those from the Root: it is a Foot and half high, and supports, when the Plant is in its highest Perfection, only one Flower. Sometimes there will be two or three; but in that Case they are always inferior to such as are supported singly on their Stalks, and of less Duration.

The Gardener will therefore do wisely if he pulls off the second Flowers as soon as they appear in the Bud, that the whole Effort of Nature may go where it was intended, to the Support of the one principal Flower.

This is of the same Structure with the rest of the *Iris*'s, but very distinguish'd in the Colouring.

It has no Cup, except some light irregular

Films, which form a kind of Scabbard, be dignified with that Name.

The Petals are six, three placed upright, and three drooping; and there is the Appearance of another Set of three, but these are only the broad Appendages of the Style. All the six Petals unite at their Base; and from the Centre spring three Filaments; these lie upon the drooping Petals, and have thin, oblong, strait, depressed Buttons.

The Rudiment of the Fruit is placed below the Receptacle: the Style that rises from this is very short, and its Head remarkably large, and form'd of these three Divisions, which we have observed resemble Petals.

The ground Colour is a pure pearly white. Each of the drooping Petals has a singular oblong Mark, of a Lemon yellow in its Middle; and these, as well as the upright ones, are streaked with a celestial blue in the most regular and elegant Manner: they have the Appearance of some of the finest and best wrought blue and white Sumner Silks.

The Streaks of blue are in some Flowers broader, and in others narrower: they are also of a deeper Colour in some Flowers, and paler in others, but in all very elegant.

The yellow is subject also to some Variation, but it is best when of pale and delicate Hue we have described here; when dark it gives a Coarseness to the Flower.

Culture of this IRIS.

We have had Occasion in a preceding Number, to treat of the Culture of the bulbous *Iris*'s, and we have given it at large.

July. Nothing particular is required in respect of this Kind, but a careful Choice of the Plants reserved for Seed, and frequent Removing of the Seedlings: for upon this depends the Variation of Colours in Flowers much more than the Generality of Gardeners imagine.

In this Manner of managing the Plant, I have seen from the same Seed more Varieties than all that CLUSIUS has enumerated, or our late Cultivators of Flowers understood.

A good Quantity of the Seed should be sowed together; but all from strong Plants, and such as have ripened only one Flower.

This should be sown just when it is thoroughly hardened; and when the Plants come to Flower, their several most distinct Variations in Colouring should be mark'd; that when the Roots are taken up to be transplanted into their Places in the Garden, the Flowers may set off one another by the Variety.

There is nothing that more pleases a judicious Eye in the Article of Gardening, than the Change of Colouring under the same Form; and it would not be easy to produce an Instance in which that Variation is more unbounded.

In some of these Seedlings the Lips of the three lower Petals will be entirely yellow; that Spot which is natural to their Centre spreading throughout, and obliterating at once the white and blue.

In others, the Centre of this Part will be Orange colour'd, the outer Part pale yellow; and purple Veins will run over this, as blue upon the white.

In others, the three lower Petals will be yellow, vein'd with purple; and the three upper white, vein'd with crimson.

In others, the yellow Spot on the lower Petals will be surrounded with a Ring of pearly white;

and the three upper ones white, vein'd with purple and yellow. July.

In others, the three Colours white, yellow and purple, which in these are disposed with Regularity, will be thrown in wild Streaks and Blotches throughout, and form an almost innumerable Series of Changes.

The Gardener will know that a Plant capable of this redundant Variation, is a fine Subject of his Art. No matter that some Patience is required to bring it to flowering: let him recollect always what he has to expect, and he will think lightly of the Trouble.

In order to have a Chance for all the Kinds, let him sow a good Quantity of the Seed. A larger Bed of Seedlings is as easily taken care of as a smaller; and 'tis from the Number he is to expect his great Success.

In all these Sowings a Multitude of the Plants flower in the common Way, for one that answers the Intent of Elegance and Improvement; but if in a Bed of a Hundred, only half a Dozen come to this Perfection, the Labour is very well return'd; for these are a lasting Treasure to the Gardener, and they will encrease themselves abundantly.

When the fine Flowers have been separated, the common Kinds may be planted in the Borders. These should be properly disposed in a particular Bed, and they will improve for the two or three first Years. They should be constantly taken up when the Leaves decay, and every Year a new Parcel of Compost allowed them.

Their Off-sets should be separated every Time they are taken up; and these because small, must be planted in a Bed in the Seminary; from whence, when they are fit to flower, they must be removed into the Garden.

C H A P. II.

The Care and Management of the Ground.

THE Garden is now in its Glory, and all Care must be taken to keep it in perfect Order. Cleanliness is the best Companion of Beauty: the Eye would be disgusted that must wander over Weeds and Dirt in order to come at Flowers; but where every Thing is in Order, the Transition from one to another is very pleasing. All Weeds must for this Reason be taken up at their first Appearance, and the Surface of their Borders should often be broken, and raked clean and smooth.

On all these Occasions it will be proper to draw up a little Mould about the Bottoms of those Plants which are coming into Flower; this strengthens them, and the breaking of the Ground disposes it to receive and retain the Dews and

Waterings in a much better manner than when hard.

The Gravel-walks should be constantly rolled, and the Grass mowed frequently: thus every Thing will have an Air of Culture.

The Fields at this Time naturally begin to look dry, and their Plants flag with Heat, and want of Moisture. The Contrast is fine between wild Nature in this State, and the well managed Garden.

The Air of Cleanliness and Health is a Charm equal to that of the best Flowers; and every Plant in the Borders appears with a double Beauty, from the Comparison between that and the Field Herbs kept up in the Imagination.

When all is in order with respect to the growing

July. ing Plants, and the Ground in which they stand, let him open that in which the Spring Flowers blowed, whose Leaves and Stalks are faded: several of the *Narcissus's*, *Fritillaries*, and *Hya-cinth's* are now in this Condition.

It should be an universal Rule of Gardening, to take them up when they are in this State of Rest, between the close of one Season's Growth, and the preparing for another. Some will bear to be kept out of the Ground till Autumn, others must be planted again immediately; but the Advantage arising from taking them up is equal to both, and should never be omitted.

When such are taken up as are to be planted again immediately; let this Opportunity be taken of giving a fresh Soil, or for well digging up the old.

We have observed in the proper Places, what Kinds suit each of these Services; and those which are to be kept out of the Ground till Autumn must be cleaned, spread upon a Mat, and turned till they are hardened. The others must be cleaned in the same Manner; their Off-sets taken away; and the Ground being made up, they must be planted again as at first.

This done, let due Care be taken of the Layers made the preceding Weeks from Carnations, Pinks, Sweet-williams, and other flowering Plants.

Let the Gardener examine whether they keep well in their Places, and see that the Earth preserves a due Degree of Moisture upon them.

If any appear likely to start, let them be secured by new Forks; and if the Mould be at all dry'd, let it be frequently and constantly watered: whenever the Watering washes any Part of it away, let fresh Mould be laid on in the Place; and in the tenderer Kinds, where they are seen to strike with Difficulty, let them be shaded.

The hardy Plants of all Kinds being thus put into due Order, let the Gardener employ his Care upon the Green-house and Stove Kinds.

Many of the new raised Green-house Plants will by this Time require to be removed into larger Pots; and this must be done with great Care.

The Pots, the Mould, and the Water being all set ready, let the Bottom of the new Pot be covered two Inches with Mould: then with a thin Knife, such as Painters use for taking up their Colours from the Stone, let the Mould be loosened all round the Edges of the Pot, to the Bottom.

It will thus come out in an entire Lump, with the Plant firm in the Midst.

Let the ragged and decayed Roots, which cover the Surface of the Ball, be cut off with sharp Scissars; then let the whole be set in the new Pot, and the fresh Mould filled in round it.

Let the Surface be raised an Inch above that of the original Ball; and finish the Work by a moderate Watering all over the Plant, and on the Mould.

If there be any decayed Leaves let them be taken off; if the Stem be foul let it be cleaned;

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July. and any Filth that may be upon the Leaves or Shoots, washed off with a Piece of Flannel dip'd in warm Water. All this, beside giving an Air of Cleanliness, assists in the Growth of the Plant.

Set the Pot in a shady and sheltered Place; and the next Day thrust the same Knife down in several Places from the Surface to the Bottom of the Pot. These Knives have no Point nor Edge; they cannot wound the Root; and this Way they break the old Cake of Mould, which is often too compact about the Fibres.

This is all that can be done in those which have had but a moderate standing in the former Pots; but for such as are better established, it will be very proper to pull away a great Part of the old Cake of Mould before they are planted in the new Pot.

Whatever Roots are bared by this, must be clip'd off at the Ends, and the Plant as quick as possible planted again; and these Parts covered with all Care and Attention.

In each Case the new Pots must continue in their shaded Situation till the Plants are perfectly rooted, and have recovered the Check from the Removal. They must be then brought into the Place where the other Green-house Plants are set out for the Summer; and they must be very carefully watered.

If any Check be seen in their Growth as they stand there, they must be again removed into the Shade till fully established.

This Week will be a very proper Time for taking off Cuttings from the Euphorbiurns, Mesembryanthemurns, and other succulent Plants, for propagating them.

Let the Cuttings be laid upon a Shelf in an airy Room, and every Day turned for twelve Days. This will prevent their rotting when planted, to which the wounded Part is otherwise very subject.

These Cuttings maintain a kind of Growth while they lie upon the Shelf. In their natural State they are supported very much by the Air; for we see a Handful of Mould will be sufficient in our Pots for some of the largest Kinds; and in their native Climates, they live in scorched Sand.

In this Time of their lying on the Shelf, the Motion of their Juices is continued, and the Principle of Life kept up, otherwise they would not grow when afterwards planted; and a kind of Skin is thrown by Nature over the Wound during this Time of lying out of the Ground, which enables it to bear the Moisture afterwards, without Mouldiness.

This kind of Growth from every Piece, is not peculiar to the succulent Kinds: the World would be surprized to know how far Experience confirms the supposed Reveries of Agricola. Of this we shall speak in its Place.

Let the Degree of Heat in the Stove be very well regulated by the Thermometer; and let the Bark-beds be refresh'd where that is found necessary. Their Heat depends on Fermentation,

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which

July. which naturally lasts a great while; and when it is almost over, will be renewed by adding some fresh Bark, which works as Leaven to the Mass, and sets it all into a ferment again.

Sometimes the barely stirring the Bark up will do, sometimes a larger Addition of new Bark is required, and in other Cases a smaller will serve.

In all this the Gardener must judge for himself by the Heat of the Bed: but in whatever Manner

it is done, the Pots which are taken out for it must be placed in again with all Expedition.

With respect to the Generality of Plants in the Stove, they will at this Time require free Air as much as can be conveniently admitted; and those which are most exposed, will be scorched unless the Glasses be shaded in the Middle of hot Days.

July.

S E C T. II.

The Management of the SEMINARY, for this Week.

THE Heat of the Sun is now the great Annoyance of the Nursery: the Beds of Seedlings will be scorched up by it unless shielded by Reed-hedges, or some other Shelter from its full Beams at Noon; and the Earth will be so dried up, as to require frequent Waterings in these Beds, and wherever else there are new planted Trees, Shrubs, or Plants, which are not sufficiently established. This depends upon the plainest Reason.

All new planted Trees and Shrubs depend upon the superficial Part of the Mould for Nourishment, for their Roots were cut in taking up and putting down again: therefore unless that superficial Part of the Ground be kept in a due Temperature of Moistness by Waterings; when Nature withholds her Showers, the new shot Fibres from these Roots will be burnt up; or if they escape this, there is no Moisture for them: but in the more established Plantations, the extremest Roots penetrate very deep, as well as very wide, and will find a Supply when all upon or near the Surface, appears parched with Drought.

Let the Business of Inoculating be continued; and the several Kinds of Peaches, Nectarines, and Cherries, taken in Succession according to their Seasons.

A great deal of this Work miscarries from the careless, or ignorant Manner in which it is done.

If the common Process be regarded, the Success depends entirely upon the good Condition of the Bud.

The Perfection of this Operation is to insert it in the Stock as soon as taken from the Tree, and prepared for the Place. All the Time that it lies exposed it grows damaged: the hotter the Air the sooner it is hurt, and especially when the Sun shines. 'Tis for that Reason a cloudy Evening is the best of all Times for the Purpose; and this is the Occasion of our practical Caution, in a former Number, to take no more Cuttings off each Time than will be wanted for the same Evening's Work.

They are much mistaken who suppose soaking them in Water will answer the Purpose. The true Method is to take the Cutting in such manner that it may be of the same Degree of Freshness with the Stock; no drier, nor any moister, and in this Case not one in a Thousand will fail.

The Growth of Weeds requires continued and repeated Care in this Part of the Ground, and particularly among Seedlings. They are easily overpowered, especially in a dry Season; for tho' the Weeds grow slower at such Times, they also are less able to bear their Mischief.

S E C T. III.

POMONA, or the FRUIT-GARDEN.

THE Care of the Nursery leads to that of the Fruit Garden, and the Management of one reaches what is expected for the first Stages in the other. As much Care is required of those Fruit Trees which have been newly planted in the Garden or Orchard, as of those in the Seminary after their Transplantations.

Let the Gardener now look with great Care to their Fastenings, whether by nailing to Walls, or by tying up to Poles. If they rock at the Root they will be of very short Duration, for there is as much Mischief in letting in Drought as Frost. If they be at all loose, let them be tied or nailed up more securely; let the Mould be

July.

be broke all about them, and carefully closed at the Bottom of the Stem; and after this let them have frequent Waterings. If these do not restore them to perfect Vigour, let a little Dung be added to the Mould, and washed in by repeated and large Waterings: this I have known to succeed at the present Time of the Year beyond Expectation; but there is a great deal to be considered in regard to the proper Method of using it.

In the first Place, the Kind is to be suited to the Nature and Condition of the Tree; and then such a Method must be found of applying it, as will give its Virtue to the Roots. Every one must be sensible, that if Dung be only spread upon the Surface of the Ground at such a Time of the Year as this, the Air, not the Soil, would receive its volatile and active Parts: the Sun would raise them like the Fire of a Chymist, and only a dry chaffy Substance would be left upon the Ground.

Among the various Kinds of Dung we find very different Qualities; and by these they are suited to various Services: the Gardener who does not know how to select and apply them, is deficient in a very essential Article of his Business.

Horse-dung, which is the most universal Manure, is hot and rank: it requires to lie a long Time before it is fit for Use about Fruit-Trees; and even in the Kitchen-Ground it is often very hurtful, by being too fresh.

Cow-dung is very rich, and it has neither the Heat nor the Rankness of the other: it is fatty, and of long Continuance in the Ground. The Effect is not so sudden as that of Horse-dung, but it is more natural, and more lasting.

In all Respects therefore Cow-dung is best for Fruit-Trees, unless the extreme Coldness of the Soil declare for the other. This is a Fault we would have the Gardener early mend, by digging in Sand and Ashes among the clayey Earth; but if that have been neglected, the Horse-dung in this single Instance is preferable to the other; but even in that Case it must not be fresh Horse-dung that is used, but such as has lain a long Time to mellow, and to evaporate its Heat.

These are the two principal Dungs, but there are some others very well deserve the Gardener's Notice.

Hogs Dung has many excellent Qualities: it is rich and not rank; it takes Effect very quickly, and is therefore of all others the best calculated to answer a present Exigence: it agrees with one kind of Soil as well as another; but if any continued Effect be required from it, there must be a fresh Quantity used every Fortnight.

Nothing appears so strange in the Management of Gardens, as that so excellent a Manure, and so suited to the present Occasions of the Ground for many Purposes, should have been so thoroughly overlooked: there is scarce to be found a Gardener who ever used it, or a Book upon the Subject in which it is once recommended. We hope

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to make our Pupils better acquainted with its Value; and can assure them with perfect Truth, that nothing will be advanced here but on the unerring Foundation of Experience.

Sheep's Dung is rich and hot; the Effect is speedy, but usually too violent. Its Nature qualifies it for the same Use with Horse-dung, in cold and heavy Grounds; and the best Way of using it, is in a Mixture with the Urine of the Creatures, in a sandy Mould. The Method of obtaining this Manure, is delivered at large in the *Compleat Body of Husbandry*; and it is excellent for Fruit-Trees in cold tough Soils.

The Dung of Fowls is light, very rich and hot; and of all Kinds that of Pigeons is the hottest. It may be very useful in starved, poor, and cold Soils, but requires great Discretion in the Use.

From among these Kinds of Dung the Gardener is to chuse for the present Occasion of a new-planted Tree which is decaying for want of Nourishment; and in the same Manner for any other Service.

Of all the Dungs to be chosen for this Purpose, the Preference is due to that of the Hog; but unless Care be taken in applying it, no Good can be expected.

If the Gardener, on hearing that Hogs Dung was good for this Service, should spread some upon the Ground, and fancy he had made a Tryal, he would abuse his Instructor, and declare what he had read was false. This Dung soon loses its Effect when used ever so prudently; but if scattered to the Sun in such a Time as this, it would do nothing.

What I have found serviceable is this:

Mix equal Parts of Hogs Dung and Pond-Mud; spread this upon the Ground about the young Fruit-Tree, and give a large Watering. This done, spread over the whole an Inch Depth of fresh and fine Pasture Mould; and after two Days give such another Watering. At the same Time secure the Tree perfectly from rocking; take off any decaying Leaves, and water the whole Head each Time.

The Effect is very surprising; two or three Days will restore a Tree that was perishing.

A great Part of the Virtue of the Dung is washed in by the first Watering; it is after this covered by the fresh Mould, so that the Sun cannot evaporate it; and after it has lain thus mellowing with the fresh Earth and Mud, the joint Virtue of the Whole is carried in by the succeeding Waterings.

This would not be an adviseable Method for Trees whose Fruit should be expected that Year, for the sudden Swelling upon such Waterings is wrong; and this is a Way in which the Dung would affect the Fruit, but for young Trees nothing is like it.

July.

July.

SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

LET a Piece of Ground be chosen this Week for the late Crop of French Beans. It must be in a Part of the Kitchen-Garden open to the Noon-day Sun, and defended from the East and North. The Ground must be dug a full Spade deep; and it will be proper to scatter some very mellow Dung upon the Ground first of all, and dig it in.

Let the Surface be levelled, and let some good sound Seed of the large white Kind be chosen. In the Morning put this to steep in some River Water, with a Handful of common Salt. In the Evening let some Drills be opened with a Hoe, at a Yard asunder, and into these drop the Seeds. They should lie about a Finger's Length a-part; and if Care have been taken in picking and soaking them, scarce one in a hundred will fail. The Ground must be levelled over them, and they ought to lie at about three Quarters of an Inch Depth.

In about eight Days they will appear above the Ground; and they must be encouraged in their Growth by frequent moderate Waterings: as their Stems advance in Height, they must have the Mould drawn up about them. After this they will only require the common Care of Weeding and Watering.

They will thus come to their Perfection at a very agreeable Time, after the early Crops are consumed; and with due Care they will continue to produce till the latter End of *October*.

To keep the Plants in Vigour for this Produce,

let the Gardener form his Practice upon the general Rule we have laid down in regard to all Vegetation, which is, that the ultimate End of Nature in the Growth of Plants is the Ripening of their Seeds; and that nothing exhausts them like it.

Let him take Care to gather the Beans from these Plants as fast as they acquire a due Bigness; for when they are suffered to remain any longer, Nature is at work to ripen their Seeds, and the great Purpose of a successive Produce of young Fruit is stopped.

Let them be cleared of all that are of any Bigness, every third Day; and after every Gathering let them be well watered: this will promote the bursting out of a new Set of Flowers, and the setting of more Pods; and in this Kind of Bean the Growth of fresh Crops will continue as long as the old ones are taken off, till Frost destroys the Plants.

The great Care of Weeding and Watering is to be continued this Week throughout all the Kitchen-Ground; but it is most essential to those Kinds which have been newly transplanted.

The Endive and Celeri that have been planted out for blanching, must be constantly and regularly supplied with Water.

The Lettuces will require the same Refreshment; and for both these Crops a great Care is required to protect them from the Slugs, or naked Snails: these should be killed every Morning and Evening, and after Showers.

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COMPLEAT BODY of GARDENING.

NUMBER XLIII.

For the second Week in JULY.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. The BLOOD-SPOTTED CARNATION.

July.

Pl. 43.
Fig. 1.

WE enter now upon the Flowers of Summer: what we have hitherto described are but the latest of the Spring, tho' interspersed with some which wander from their proper Seasons, and flower too early for their just Time.

The Distinctions in Nature are not kept up with Exactness on this Head; and those have therefore used an uncertain Method, who arranged the Garden Flowers according to the Seasons. We take them occasionally as they come into Flower, in those Gardens whence our Store of Observation is supplied; and the present Plate contains two Spring Flowers among those of Summer, as the preceding have given some of the Summer Plants with those of Spring.

The Carnation is the great Pride of the Florist's Summer Collection; and this Kind with which we open the Scene of their Beauties, tho' one of the earliest, is not the least elegant.

It is one of the more simply variegated Kind; the additional Colour being simple, and laid on in Spots. This Disposition is what gives a Carnation the Name of PIQUETTE. When the additional Colour is in Streaks, if it be only one, the Flower in their Language is called a FLAKE; if more than one, it is a BIZARRE.

Numb. XLIII.

These are the Gardeners Distinctions: 'tis fit our Pupil know them, that he may be able to call each by its proper Title; and if to these he adds the two-coloured Kind, which has the white on the under Side of the Petal, and the purple entire on the upper, to which they give the Name of PAINTED LADY; he has all their general Terms.

Under each of these Heads there are innumerable Distinctions of Flowers raised from Seeds; and these the Gardeners have named after the Heroes of old Time, DARIUS and ACHILLES; or after their Masters. Science would smile to enumerate these, nor would Volumes contain them.

REA, who wrote half a Century ago, has named more than four hundred; and our Industry since his Time has made that Number trifling.

All these, that is every thing which is properly called a Carnation, the Botanical Student is to know, are Seedling Varieties of the common Clove July-flower, so named expressively from its Scent resembling that of the Clove Spice, and from July its Time of flowering.

From this Stock we shall trace them under the succeeding Head, which is the Clove Julyflower little altered, nor yet broke into Spots or Streaks, or other Divisions of different Colours.

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July. They have erred, who supposed the Julyflower itself might be referred to the common Pink, for it is a Species truly distinct.

We have in this Place given the three in Succession; that the Botanical Student may comprehend their true Nature without Confusion, and the Gardener read their proper Difference.

Those who have considered the Carnations as distinct Kinds, and honoured them with particular Names, have called this blood-spotted Flower the *Red Piquette*, and the *Red Pounced Carnation*: and the Latin Authors, *Caryophyllus maximus variegatus*, and *Betonica coronaria, flore pleno maxima, punctis rubris variegata*. The first is the Name of CASPAR, the other of JOHN BAUHINE.

In the plain or simple State, the same Authors have called the Plant *Caryophyllus altilis major*, and *Betonica coronaria sativa*.

These and the other Varieties LINNÆUS comprehends under one general Name. Having used the Word *Caryophyllus* as the Denomination of the Clove Spice Tree, he appropriates for this, the Term *Dianthus*; and adds, as the Name of the present Species, *floribus solitariis, squammis calycinis subovatis, brevissimis, corollis crenatis*: Single and dented-flowered *Dianthus*, with the Scales of the Cup very short, and of a Figure nearly oval.

This is the distinct and proper Name of the single Clove Julyflower, and it equally agrees with all the others.

The Number and the Colouring of the Petals in a Flower our Student knows is no Mark of a specific Difference: this is all the Variation, though unlimited in the Disposition, which there is between the common Flower and the whole Family of Carnations raised from it; the *Piquets*, *Bizarres*, *Flakes*, and all the rest of our Carnations.

The Plant is unaltered thro' all these Varieties of the Flower, and the same Description will always suit it.

The Root is fibrous.

The Stalk is round, smooth, and of a pale pearly green, jointed with swelling Knots, two Foot high, and divided into a few Branches.

The Leaves are of the same Tinge with the Stalk, but deeper, a pearly grey mixed with a light green: they are oblong, narrow, grassy, sharp-pointed, and of a firm Substance, and they stand two at each Joint.

The Flowers terminate the main Stalk and all its Branches, and they are large and elegant, full of Petals, disposed with great Regularity, and stained with lively Colours.

July. The Cup is double; the inner one cylindrick and long; the outer composed only of four slight Scales. These rise immediately from the Head of the Stalk, and are oval, pointed, and of a firm Substance: two of them have their Situation a little lower than the others: from the Hollow made by these, rises the inner or cylindrick Cup; this is what Gardeners call the Pod of the Carnation: it is of a pale Colour and firm Substance, erect, hollow, and divided at the Top into five Parts. These were meant by Nature to give an easy Opening for the Petals; and the Gardener must assist, by cutting them down farther, when he has raised the Plant in its full Size and Glory.

The Body of the Flower is composed of numerous regular and elegant Petals; their Ground Colour is a pure and perfect white; and upon this are scattered little Dots of various Forms, of full and fine Blood-red; these seldom run into one another; they leave no large Space of the Petal vacant, nor are they in one Part more numerous than in another. In this consists the Beauty of the Flower: from this State there are innumerable Variations. In the Place of regular Spots the Red will sometimes run into Clouds; and instead of this deep Blood-Red it will be pale and faint, or tinged with Blue, and emulate the Purple.

The Student who would refer the Plant to its proper Class, must examine a single Clove Julyflower: from this Stock it is derived, and he will here find the regular and unaltered Characters.

The Petals are five: they have long narrow Bases, equal to the Depth of the inner Cup: the Body of each Petal is broad, obtuse, and notched.

In the Centre rise ten Filaments; they are smallest at the Top; their Length is equal to the Cup, and they have spreading Buttons, of an oval but somewhat oblong Form, compressed and incumbent. In the Midst of these appear two conspicuous Styles, longer than the Filaments, with crooked pointed Tops.

The ten Filaments refer the Plant to the *Decandria* of LINNÆUS, and the two Styles place it under the second Section, the *Digynia*.

The Culture of this is the same with that of the other Carnations, which we shall deliver at large in a succeeding Number, describing two other very conspicuous Kinds: in this we have propos'd to acquaint the Student with the true Form and Characters of the Flower, and the Nature of its innumerable Variegations.

2. The GREAT CRIMSON CARNATION.

Pl. 43.
Fig. 2. We have observed that the Carnations are all feminal Varieties of the Clove Julyflower, variously altered by Culture in the Size, Number, and Colours of the Petals: this is less altered than most others. The Colour is simple, though

the Form very elegant, and it may not improperly be called the double Crimson Julyflower.

LINNÆUS comprehends it with the rest, under the Name we have express'd, as the proper Denomination of the preceding Kind, nor does it differ in

July.

in the general Aspect or Manner of Growth, unless in that it is larger.

The Root is composed of many long and thick Fibres.

The Stalk is two Foot high, round, slender, but firm; jointed, and of a pale green.

The Leaves are placed in Pairs, and are narrow, and sharp-pointed.

The Flower is very large, and full of Petals; they are broad and deeply jagged at the Edge.

The Colour is a deep and fine Crimson, without

any Spots, Streaks, or other Variegations; and the Petals naturally spread out in a bold and pleasing Manner.

The Beauty of this Kind is Doubtless, but it will sometimes rise single; and is then far from a despicable Flower.

This is one of the first and easiest Changes from the common Clove Julyflower; and its Seeds are a very proper Kind for raising more Varieties. The Manner, we have observed already, will be given in a succeeding Number.

July.

3. GREAT TOBACCO.

Pl 43.
Fig. 3.

This is a tall and not inelegant Plant; familiarly enough known now of some Years, but not unworthy a Place in any Garden among the taller Growths.

It was altogether unknown to the Antients, for we have received it from *America*, nor is it Native of any other Part of the World: the Reader is therefore to expect no antient *Greek* or *Latin* Name for it.

From *Nicot*, who first brought it into *Europe* in 1559, the Plant obtained the Name *Nicotiana*: this has been the most received but not the only one in Use: some have taken the *Brazilian* Term *Patum*, others have made *Latin* of the Word Tobacco, by which we usually call it in *English*; and some affecting more Correctness than they had Application to possess, referred it to the Henbane Kind, and called it *Hyosciamus Peruvianus*.

C. BAUHINE, and the other Writers of his Time, have called this Species *Nicotiana latifolia*, broad-leaved Tobacco; but that is an ill-chosen Term, for there are some other Species whose Leaves are proportionably broader.

LINNÆUS retains the Name *Nicotiana*; and adds, as the Distinction of the Species, *foliis lanceolatis*: Tobacco with lanceolate Leaves.

What he expresses by *lanceolate*, is a Leaf broadest in the Middle, and small to the Point; and this perfectly characterises the Plant; for no other known Species has them of that Form. It is entirely distinct from the Henbane, and all other Genera; and is the Kind of *Nicotiana*, of whose Leaves there is that vast Consumption for the Articles of Tobacco and Snuff.

The Root is composed of numerous thick white Fibres, connected to a small Head.

The Stalk is two Yards high, round, firm, of a pale green tinged with a reddish brown, and toward the Top branched; hairy, and full of a spongy Pith.

The Leaves are large, and of a light green; they have no Footstalks; but adhering to the Stem by a broad Base, they are thence dilated each Way to the Middle, and from that Part again grow smaller to the Point. This is the lanceolated Form.

The Colour is pale in the upper Leaves, and

they are hairy, as the Stalk. The Ribs are large, their Taste is very acrid, and they tinge the Spittle yellow.

The Flowers stand in great Numbers on the Tops of all the Branches, and they are large, and of a delicate though not strong Red.

The Seed-vessel is large, and of an oval Form, and contains numerous Kidney-shaped Seeds.

Each Flower has its Cup, which is of an oval Figure, short, of one Piece, divided into five slight Segments at the Verge; and this, as well as the Leaves and Stalk, are clammy to the Touch.

The Flower is formed of a single Petal, and is Funnel-shaped. The Tube is very long, and the Mouth broad and spreading, divided by Indentings and Foldings into five Parts. Within this are placed five Filaments, with oblong Buttons, and a single long slender Style with its Head.

The five Filaments refer the Plant to the fifth Class of the *LINNÆAN* System, the *Pentandria*; and the single Style to the first Section under that Head, the *Monogynia*.

Culture of this TOBACCO.

It is an Annual, Native of the warmer Parts of *America*, but living very well in the more Northern Latitudes; and with due Care, and with a very little Trouble, may be raised to the greatest Perfection in our Gardens. It would not be difficult to cultivate it in Fields for Use, if the Laws gave Permission.

The Plant loves a deep rich Soil, and with us will succeed best in a sheltered Situation.

The Seeds must be sown at the latter End of *February*, on a common Hot-Bed, and the Plant must be treated with the same Management as the other tender Annuals: when it has been removed about twice, and is hardened to the Air, it must be planted in rich Garden Mould, well dug, and be allowed full Scope of Room. The Plants should stand four Foot asunder, and the Earth be hoed once in a Fortnight between them: they will thus grow in as much Vigour as in *America*, and produce innumerable Flowers.

The

July.

The Care of saving Seeds for a next Year's Crop, should come early into the Gardener's Mind: he should mark the strongest Plant as soon as they come into Flower, and not suffer this to exhaust itself by too large a bloom: he should cherish the ten or twelve Flowers that first

open, and take off all succeeding Buds. Thus the whole Strength of Nature being employed on these, the Seeds will be ripened in a most perfect Manner, and his next Year's Plants will very well shew the Effect of his Care.

July.

4. DOUBLE ROSE CAMPION.

Pl. 43.
Fig. 4.

The Gardener is well acquainted with this Plant, and its easy Culture: he knows that *Campion* is the *English* Name of *Lychnis*, synonymous with *Catch-fly*; and he cannot need be told, that this particular Kind obtained the Addition of Rose from the glorious red, and Lustre of the Flower.

It has long been an Ornament of our Gardens, and from all Time the Botanical Writers have described and celebrated it.

DIOSCORIDES has mentioned in too express Terms to be misunderstood; and from him many of the later Authors have called it *Lychnis Coronaria*, DIOSCORIDIS *sativa*; others *Lychnis Coronaria*, and CAMERARIUS simply *Lychnis*.

Our Student must be told that LINNÆUS, whom all with Reason follow now in Botany, has discovered in the Characters of the several Plants joined by others under the common Name *Lychnis*, the Foundation of a Distinction into several Genera. This is highly useful, for the Extensiveness of the old Genera was one of the greatest Faults of the Systems.

He has separated from the rest the Cockle, this, and some others; and given the new established Genus the Name *Agrostemma*: to which as the Distinction of the present Species, he adds, *Tomentosa, foliis ovato lanceolatis, petalis integris coronatis*: woolly *Agrostemma*, with lanceolate oval Leaves, and undivided coronated Petals.

By this Name he expresses the *Rose Campion* in its single State, and our Pupil knows that no peculiar Denomination is needed to this double Flower; a Multiplicity of Petals never being understood as a Mark of a distinct Species, but of a feminal Variety.

The Root is long and hung with innumerable thick Fibræ.

The Leaves rise in a vast Tuft, and are oblong, and lanceolate, but with somewhat of the oval Form. They are white, woolly, and soft to the Touch.

The Stalks rise among these numerous, thick, round, jointed, and two Foot or more in Height. They are woolly and whitish as the Leaves, and toward the Top they send out many Branches.

The Leaves stand in Pairs on these, and are oblong, pointed, and of the same whitish Colour, with the same woolly Covering. They have no Footstalks, but partly enclose the Stalk at the Base.

The Flowers terminate the main Stem, and all the Branches. They are very large, double, or

full of curled and waved Petals, and of a most elegant and rich crimson. This would be in any Plant extremely conspicuous; but in this it is elegantly heightened by a Contrast with the Leaves.

The Student knows he is to find a single Flower in order to trace the Characters of the Plant; for in this Multiplicity of Petals the Filaments are often obscured, obliterated, or lost.

In the single *Rose Campion* he will see the Cup composed of one Piece; tubular, of a tough Substance, and cut into five slender Segments at the Rim.

The Body of the Flower is composed of five Petals. These have narrow Bases of the Length of the Cup, and their Bodies are spread open, broad, and obtuse.

In the Centre stand ten Filaments, small at the Top, and fixed in an alternate Order to the Bases of the Petals. They are crowned with simple Buttons.

In the Midst of these rises an oval Rudiment; and from it five Styles of the Length of the Filaments, crowned with simple Heads. An oval Seed-vessel follows, containing numerous dotted Seeds.

The ten Filaments refer this Plant to the *Decandria* of LINNÆUS; and the five Styles to the fifth Section under that Head, containing the *Pentagynia*.

Culture of this LYCHNIS.

The Plant is a perennial, hardy, and spreading at the Root: it is a Native of *Italy*, and of the *Greek Islands*, and has been very long introduced into the Gardens of the more northern Parts of *Europe*.

The Student must not wonder that we ascertain this as the *Lychnis* of the old *Greeks*, though they have left but short Accounts of it; a Practice we have often Occasion to lament in their Writings concerning Plants, too common at that Time to need Description. What they have said agrees with it perfectly; and PLINY, who at random places the *Lychnis* among the *Roses*, yet gives some Confirmation; for he says the Petals of the Flower never exceeded five in Number.

The Antients therefore, though they esteemed the Plant, knew it only in the single State of the Flower.

In this meaner Condition it is still beautiful; and though neglected with us who have doubled

July. the Flowers, and varied their Colouring, they were fond of it in Flower Pots, Festoons and Garlands; and wanting Cotton, they used the downy Substance which covers its Leaves for the Wicks of Lamps. Hence was derived its Name *Lychnis*, from the Greek *λυχνον*, a Lamp; and therefore 'tis to be lamented, that LINNÆUS varied it.

He has used *Lychnis* as a Term for another Genus; which not having this Character, could not have been called among the Antients by that Name.

The Addition of Rose to its Name seems to have come down to us from PLINY, who considered it in his rude Way as a Rose; but he adds to the Certainty of this particular Plant being meant, by his observing that it has no Smell.

From this wild Plant the common single Field *Rose Campion*, improved by the Culture then known in Greece and Italy, our superior Art has raised the elegant double Flower we here represent; and some other fine Varieties.

The Plant requires a deep Soil; and will grow in any that has that Quality. It is easily increased by parting the Roots: but this, though it satisfy the common Gardener, is not the Method to Perfection.

To raise all the Varieties of it in their full Beauty, a proper Soil must be adapted; the Plants must be raised from Seeds; and according to our Method of tracing every Article from the very Origin of Improvement, this must be undertaken in the following Manner:

Mix equal Parts of rich Pasture Earth, and River Mud: to a Barrow of this add three Pecks of coarse but clean Sand, and one Peck of Woodpile Earth; and the same Quantity of Cow Dung, old, and well rotted. This is the proper Soil; and in this I have found the Plant thrive beyond what is usually to be shewn.

This should be mixed up in Autumn, and lie a Year; it should be turned often to blend its Parts, to give it the Influence of the Air, and to prevent the Growth of Weeds.

This being prepared, let the Gardener mark a Plant of the common single *Rose Campion* for Seed. Let him chuse a strong and healthy Root, and watch its flowering. Let him cut off all Stems but the principal; and when about a dozen Flowers are open, let him take off three or four of the weakest, and worst looking of these; and after that, pull off all others in the Bud just as they are about to open. Thus will the whole Effort of Nature be employed on ripening the Seeds of these eight or nine Flowers; which the Gardener must also promote by clearing the Ground for a Yard about the Plant, and at Times breaking and watering it.

When the Seeds are thoroughly ripe, let him harden them upon a papered Shelf, in an airy Room, and in the Middle of August sow them in a shelter'd Part of the Nursery, upon a Bed of the Compost raked very fine. Let them be covered

Nº 43.

July. a Quarter of an Inch with Mould, and a Hawthorn Bush laid over the Ground.

In this Bed they must be kept carefully weeded and watered till big enough to remove.

The finest Plants must then be transplanted to a new Bed of the same Compost, and set at six Inches Distance.

The others being left at the same Distance in the Seed-bed. They must in both Places be from time to time weeded and watered, and they will come to Flower the first Year.

There will be found among them a great many of the common Kind, but several also of other Colours: the best of these must be planted out in the Garden in the latter End of August, and Seeds from the finest of those improved Plants must be sown in the same Manner.

Thus from two or three Sowings there will be produced all the known Varieties of the Plant: There will be many double Flowers; and of these, as well as the single, there will be a Variety in Colouring. Some will be of the natural deep, velvety crimson of the original Flower; some deeper yet, and purplish; others paler and approaching to the Peach-bloom Colour, and some white; but the most elegant of all will be the large double Flowers, whose ground Colour is white, and whose Petals are stained curiously with a fine Blush of red, pale, and fleshy.

These fine Flowers obtained from Seed, must be nursed afterwards with all Care. The Roots must be taken up every Season after the flowering is over: the best Time for this is the third Week in August. The Compost should be removed, and fresh put in its Place at this Time, and all the young Heads which have been produced about the old Root should be taken off; the dead Leaves taken off from them, and from the old ones, and the Fibres trim'd.

The old Roots being thus cleaned, must be planted in fresh Compost at fifteen Inches Distance, and they will then flower in full Perfection the succeeding Year.

The Off-sets will be too small to bring into the Flower Garden; and they should be planted in a Nursery Bed of the same Compost, at five Inches asunder, to stand till they are in a flowering Condition.

The old Roots must be kept clear from Weeds; and when the Mould between them is too dry, a little Water must be allowed; but this must be given in Moderation, for too much impairs their Strength.

In Spring let every Plant be looked carefully over; all dead Leaves taken off, and the Ground broke about their Roots.

At this Time a small Caterpillar is apt to lie concealed in the Heart of the young Shoot, and to be very hurtful. Let the Leaves be pulled asunder, and the Creature taken out; and if this do not prove effectual, some Tobacco Dust must be strewn over the Plants. This generally destroys them.

6 O

The

July. The two finest Kinds of *Rose Campion* are the double purple, and the double white stained with red, called the *Maiden's Blush*. The former of

these does best in the free Ground, the latter in a Pot. July.

5. COMMON GARDEN PINK.

Pl. 43. If there were no Carnations the common Pink would be esteemed: but they are so like it, and so much superior, that it is seen in an ill-light in the Comparison.

We have observed before, that they err who suppose the Carnation raised from it by Culture, the Species is different: but as the Clove July-flower, under the curious Gardener's Hand, produces all the Variety of that elegant Flower, this common Pink affords several beautiful Varieties.

All the old Writers have mentioned it; and under the general Name *Caryophyllus*, they add *vulgaris* and *bortensis*.

C. BAUHINE calls it *Caryophyllus simplex flore minore pallide rubente*, and Lobel *Caryophyllus flore pallido suave rubente*.

We have had Occasion to observe before, that LINNÆUS has changed the generical Name in this Instance, and calls the Plant *Dianthus*: he adds as the Distinction of this Species, *floribus solitariis squamulis calycinis lanceolatis binis, corollis crenatis*: single flowered *Dianthus*, with the two Scales of the Cup spear pointed, and the Petals indented.

The Root is composed of numerous long and tough Fibres, connected to a small Head.

The Stalks are weak, and lie in part upon the Ground, they are very numerous; their Colour is a pale greyish green, and their Height about a Foot.

The Leaves are placed in Pairs, and the Stalks at the Origin of every Pair have a round Joint or Knot: they are narrow, pointed, of a firm Substance, and of a whitish green.

The Flowers are numerous: One always crowns the principal Stalk, and there are several others on the Tops of Side-shoots; they are naturally of a pale Flesh Colour, with a Crown of a deeper Colour in the Centre.

Each is placed in a long cylindrick Cup, at the Base of which is a smaller, composed of pointed Scales.

The Petals are five; they have long narrow Bases, and they are deeply cut and jagged at the Edges. Ten Filaments stand within as in the Carnation, with two Styles; these refer the Plant to the same Class and Section, the *Decandria Digynia*.

Culture of this PINK.

The Plant is a Native of most Parts of Europe; and wherever the Chance of Winds has thrown it by Seeds blown from Gardens, it thrives as well in England wild, as with all the Assistance of Art.

Where it is Native, the Soil which favours it

most is rocky, dry, and barren: in the same Manner we never see the Flower in greater Perfection than when the scattered Seeds have struck upon a Wall, and the Plant hangs, wildly wantoning in the Winds, from the Copping.

Something like this we should attempt in Gardens; and as 'tis the Business of ingenious Art to improve upon the Hints given by Nature, our Endeavour should be to give the Plant as dry and warm a Soil as it loves wild; but not so barren.

On this dry Quality of the Earth in which it grows, depends the Fragrance of the Flowers. That Quality is in a great Measure lost when the Plant has an ill chosen Soil; but in the perfect State of Nature it is of a fine Smell at a considerable Distance.

The common Way of propagating Pinks is by Layers, which they produce in Abundance, and which take root very readily: but this limits the Gardener to a few Kinds; and as he generally plants these at random, without regard to the Soil or Exposure, they seldom attain their full Beauty. The true Method is to raise them from Seed, and he who sees the Effect will never think the Trouble to have been too great.

The Soil I have found to succeed best with the Pink is a Mixture of good dry Pasture Earth, and the Rubbish of an old Wall; about one fifth of the latter is a fit Proportion; but 'tis an essential Article that the Mixture lie a Year before it is used.

In the Season let some good Plants be marked for Seed; these should be such as have the firmest Stalks and fairest Flowers.

Let the Seed be saved with the usual Care; and in the Beginning of the *April* following, let it be sown in the Nursery on a Bed of Pasture Earth, without any Mixture, fresh taken up, and broke extremely fine. A Quarter of an Inch of the same Mould must be sifted over them; and when the Bed is dry a little, Water must be given with great Care.

In the Beginning of *May* the Plants will appear, and about the Middle of *June* they will be fit to remove.

A Bed must be then prepared with the Compost; and Lines being drawn at four Inches Distance along and across, the young Plants must be brought in and placed, one in the Middle of every Square. They must be watered at Times till they have taken root; and weeded carefully.

In the latter End of *August* they must be again transplanted into another Bed of the same Compost, and allowed eight Inches Distance. They must

July. must be weeded and watered carefully in this Bed, and kept without any farther Removal to flower.

When it is seen which are finest, they must be the succeeding Autumn transplanted again into a fresh Bed of Compost, and placed at a Foot Distance, that there may be room for laying the Shoots in order to encrease them farther.

July. In this Manner the good Kinds are to be encreased; and from these Sowings of the common Pink, will be produced many very elegant Varieties; the Pheasant's Eye, the old Man's Head, the Shock, the Damask, and many which have no Names; for every large Sowing will produce a new Flower or two; and the Stock thus encrease continually.

6. MAJESTICK CROWN IMPERIAL.

Pl. 43.
Fig. 6.

The common Crown Imperial is well known; and this, though an elegant Kind, is nothing more than a Variety from Seed; flowering later, and distinguished by the Splendor of its Colouring, and by the second Stage of Flowers. Sometimes there rises above these a third from the same Wantonness of Nature, under a delayed Plantation, and rich Soil.

The Flowers in the second, and even those in the third Crown, will sometimes arrive at a tolerable Lustre; but when they do not, they are still a greater Advantage: they terminate the Stalk agreeably, and they draw up abundant Juices; which, if not employed to bring themselves to Perfection, feed the lower Stage with a more than usual Nourishment.

The Writers on Flowers have all named this Variety, and too many of them in their usual Way, have treated it as a distinct Species. They call it *Corona imperialis duplici corona*, and *Corona imperialis triplici corona*: the Crown Imperial, with a double and with a triple Crown; and when the Flower have been diversified in Colour, they have named it as if yet another Species, *Corona imperialis flore luteo striato*: the striped flowered Crown Imperial. J. BAUHINE has called it also *Tufai*; and CASPAR BAUHINE refers it to the Lillies.

LINNÆUS, much more correct than these, denies it a distinct Genus; for the Characters are the same with those of the Fritillary: he refers it to that Kind; and for Distinction of the Species adds, *racemo comoso inferne nudo, foliis integerrimis*: Fritillary with undivided Leaves, with a leafy Head, and the Stalk naked under the Flowers.

The Root is bulbous, but of a particular Form, rounded, thick and flatted; and is composed of many thick, pointed, juicy Scales; of a yellowish white, more or less tinged with purple, and of a disagreeable rank Smell.

From this, early in Spring, bursts through the Mould a vast firm Shoot, clustered with Leaves, and loaded with the Buds of many Flowers. As the Plant advances in Height, it acquires a more regular Form.

The Stalk rises to two Foot and a half in Height, and is very thick, firm, striated, and green.

The Leaves are placed irregularly, and in great Numbers about the lower Part of it: they

are long, moderately broad; of a fine green, sharp pointed, and undivided at the Edges. For some Space above these Leaves the Stalk is naked, smooth, of a faint yellowish green tinged with a purplish Cast; and frequently spotted very beautifully. At the Top stands an elegant Head, composed partly of Flowers, partly of Leaves.

The Flowers are eight or ten in number, and they rise each between two of those Leaves which form the comose Head. These Leaves are placed obliquely upwards, and form a Crown like that of the Pineapple.

The Flowers hang down as in the other Fritillaries.

Each has its separate Footstalk; and in the common State of the Plant, these, with the Crown of Leaves, terminate the whole. But in the redundant Condition wherein it is here figured, the main Stalk is not terminated by the Head of Flowers and Leaves, but continued thro' them: and after running up naked and slender to a little Height above the Tops of the Leaves, it has a second smaller Crown of Leaves and Flowers, disposed exactly as the first, but less.

Above these there will also sometimes rise another.

The Flowers in these upper Stages perfectly resemble those of the lower, but they are less beautiful.

Each Flower is composed of six oblong, parallel Petals, disposed in a campanulated Form, and without a Cup.

At the Base of each Petal, on the Inside of the Flower, is a conspicuous hollow, rounded and filled with a transparent Liquor: these are the Nectaria of the Plant.

The Filaments are six, and the Style is single.

The Buttons are oblong and squared, and the Head of the Style is divided into three Parts. This shews the Plant to be one of the *Hexandria Monogynia* of LINNÆUS, his sixth Class, and its first Section.

The Colour of the Flowers is yellow: but under the various Stages of Culture they have this in different Tinges and Degrees. In the Condition wherein we represent it, the yellow is strong, and not unfrequently there run through it Stripes of a fainter Gold, very pleasing.

Culture

July.

Culture of this CROWN IMPERIAL.

The common Method of propagating the Plant is by its Off-sets; these are produced freely, and they grow with little Trouble to Perfection: but we shall recommend in this, as in all other Instances, where there can be Varieties obtained, the raising it from Seed.

To this Purpose, let the Seeds be saved from such Plants as are robust, and have a great Number of Flowers.

Let this be sown in Autumn upon any of the light Composts, and the young Plants weeded and watered.

When their Leaves decay, let them be covered with a Finger's Breadth of the same Soil sifted over them.

The next Year let them be planted at six Inches

Distance in another Bed, and there stand to flower. July.

Let the finest be marked, and transplanted into a new Bed, at two Foot Distance; and if these double and triple crown'd Kinds do not appear from this Sowing, let the Seeds of those selected Plants be sown again, and treated with the same Care.

When the finest of this second Sowing have been planted out in their proper Beds, let them be propagated by Off-sets.

The true Management is to take the Roots up as soon as the Leaves decay, and hardening them in the Air, to keep them out of the Ground till *August*.

They must then be planted at a Yard Distance, and this repeated every Year, taking off the Off-sets, and planting them in a Bed in the Nursery, till they are of a Bigness to flower in Perfection.

7. GREAT CHALCEDONIAN ANEMONE.

Pl. 43.
Fig. 7.

This is the latest of the Anemone Kind, and one of the most beautiful. At whatever Time it flowered, the Elegance of its Colouring would deserve Attention; but there is a great additional Merit in its thus mixing its Spring Colouring with the Bloom of Summer.

Most of the Writers on Flowers have mentioned it: they call it *Anemone Chalcedonia maxima*, and *Maxima Polyanthos*. Others, *Anemone latifolia flore coccineo*: the scarlet broad-leaved *Anemone*.

LINNÆUS, who reckons all the Variations of Colouring, and Number of Petals in the Flower, as the Marks only of Seedling Varieties, distinguishes the original Plant to which this is to be referred, by the Figure of its Leaves. He calls it *Anemone foliis digitatis*, Finger'd-leav'd *Anemone*. This is his Distinction of what is commonly called the broad-leaved from the narrow or fine-leaved *Anemone*.

The Root is tuberous, blackish on the Outside, white within, and hung with many long and large Fibres.

The Leaves are placed on long Footstalks, and they are of a rounded Form, but deeply cut in at the Edges.

Their Colour is a pale green on the upper Side, and they are frequently tinged with a purplish Hue below.

The Stalk is round, hairy, of a pale green, and tolerably firm, a Foot high, and sometimes branched.

Toward the Middle of this is placed a leafy Appendage, divided into three irregular principal Parts, and these are deep cut in again at their Edges. The Colour is like that of the radical Leaves, but without the Purple underneath.

On the Top stands a large and very specious Flower: it is composed of several Series of Pe-

tals, as the other double Anemones: the outer ones broad and obtuse; those of the inner Ranges, narrow, waved, and curled.

The Colour is a very elegant Scarlet, variegated sometimes with a paler red, sometimes with a delicate green.

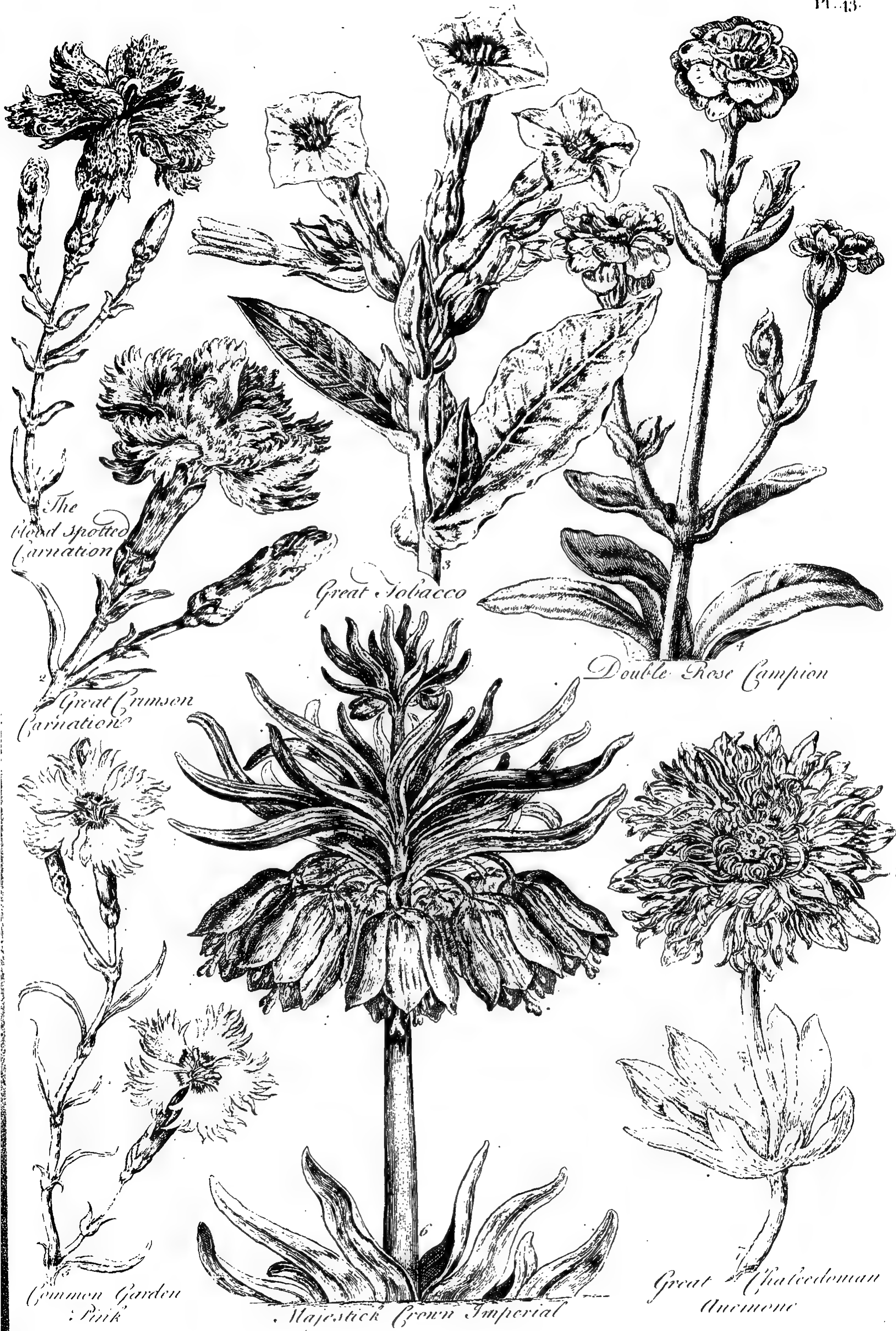
The Characters of the Plant our Student knows he is to seek in a single Flower. This in the present, as in the other Anemones, consists of two Rows or Series of Petals, three in each, and stands naked on the Stalk. Within are a Multitude of short and slender Filaments, with upright doubled Buttons, surrounding a Cluster of Rudiments of Seeds, each terminated by a pointed Style.

The Filaments rise from the Receptacle; and this with their Number shews the Plant one of the *Polyandria*: the Number of Styles also refer it to the *Polygynia*.

Culture of this ANEMONE.

There is nothing particular in the Culture of this Anemone: it rises from the Seed of the single broad-leaved Kind, and must be increased by parting the Roots.

All that is particular in the Management, is, that it should be planted late, and in a Place sheltered from the Sun; this will favour its natural late Flowering, and defer it to the present advanced Season, at which it will be much more valuable, than appearing when it might be rivalled by Numbers of its Kindred. Flowers later than their natural Time have generally a faded Aspect, but it is not so with this; under the Management we have directed it will be as full of Lustre as those in Spring.



The Blood Spotted Carnation

Great Tobacco

Double Rose Carnation

Great Crimson Carnations

Common Garden Pink

Majestick Crown Imperial

Great Chalcedonian Anemone

July.

July.

C H A P. II.

Care and Management of the Ground.

THE Borders being perfectly clean, the Plants ty'd up, and the Walks in Order, the great Attention of the Gardener for those in the common Ground, must be to defend them from Drought. If he now spare the needful Labour of Watering, all his former Skill and Toil will be in a great Measure frustrated. Let him observe to give this all over the Plants; but to do it carefully, and from a Pot that has a fine Nose.

In general, Plants that are taking their Growth must be allowed more Water than those which are just going to flower. Every one knows how much the Flavour of Fruit may be impaired by too much Watering; and 'tis the same in the Scent of Flowers, and in some Degree in their Colours. Many elegant Plants are spoiled by the Gardener's not knowing, or not observing this: some Watering is needful to swell the Buds; but when the Flowers are opening, the less the better.

The best Water for all Flowering Plants, is that of a shallow Pond, and which is open to the Sun; and the best Time of giving it is two Hours before Sun-set.

It should always be a Rule, that the Water used to a Plant be somewhat warmer than the Temperature of the Mould; for if in the other Extream, it naturally chills the tender Fibres; and 'tis very difficult to make it exactly the same.

Every Day let the Gardener look over those Plants which stand for Seed; and as the Heads or Pods harden, let him cut them off, and lay them with Care upon a papered Shelf to dry.

It is a common Custom to take off the Head of the Plant at once, when there are many Pods upon it; but in this Case, the Seed in those which flowered last, will not be ripened; and probably that in the Pods following the first Flowers, will be lost; and this is the best Seed of the Plant.

From what I have seen of the Appearance, Difference, and Growth of Seedlings, I am convinced that the Number of bad Plants often produced from Seed, depends principally upon this Article. In the Way here directed, none of the Seed will be lost, and none will be preserved but such as is in a Condition of growing.

This done in the Borders, let the Gardener look again over his Orange Trees. We have told him what Fruit they are which are most likely to come to Good; and he should now give them the last Overlooking, to see which must be taken off. Oranges may require to be thined upon the Tree as much as any other Fruit.

Their Excellence is in their obtaining a due Growth; and this they cannot do in our Climate if they are produced on weak Parts of the Tree; or if, in the very best Parts, they crowd one another.

Therefore wherever an Orange stands upon a weak Shoot, it should be taken off; and where two or more stand too close to one another, the weakest and least promising must be pulled away. There is more Beauty in a Dozen well ripen'd Oranges upon a Tree, than in a Hundred that have starved one another.

The Distance at which we direct the Fruit to be left, will also shew it to Advantage; for the golden yellow is never so well seen as when in Contrast with the full and fine green Leaves.

The Pine-Apple Plants will at this Time require a particular Care: the Fruit will be ripening fast upon them, and there is an Advantage in the early Time, which must not be neglected. The Plants from which this Fruit is cut will readily produce Suckers; and those which come earliest are vastly the best, for they will be got off before Winter.

To promote the Tendency there is in Nature to this, as soon as the Fruit is cut off, let the Plant be set in a warm Bed, and from Time to Time watered; this must be done more moderately at first, and more largely afterwards; and by this Means of Warmth and Moisture there will be a Certainty of Success.

This Week lay some Branches of the several Kinds of Passion-Flowers, and of the more delicate Jasmines. The best Shoots to lay are those of the freshest Growth, and a good Joint should always be buried in the Mould. The Assistance of a Hot-Bed is needful to some of the tenderer Kinds; and all must have the Advantage of very mellow and fine Mould, and must be often watered.

July.

July.

S E C T. II.

The Management of the NURSERY, for this Week.

THIS Week it will be very proper to bud Plums and Pears. Too much Care cannot be taken in the Choice of the Stocks for this Purpose; for on these, Vigour of the Trees, and Goodness of the Fruit, will in a great Measure depend.

The common Practice for Plums is to bud the good Kinds upon the Suckers taken from the Roots of other strong Sorts; but the best Way is to raise the Stocks by Sowing: and there is no Kind so proper as the green Gauge, which is excellent in itself, and hardy enough to have all the necessary Qualities for other good Kinds.

In Regard of Pears, the Kind intended to be budded should give the Rule for the Stock. The Quince Stock agrees very well with Pears, and should be chosen for those Trees intended for Dwarfs or Espaliers, and for those Kinds which are melting. On the contrary, for the breaking Pears, the best Stock is some Pear of the melting Kind. The Method differs in nothing from that of other Kinds which we have delivered already.

This Week also the later Peaches and Nectarines may very properly be budded.

It will be Time now also to look over those which were budded first: it will be easy to see which are likely to succeed; and it will be proper to loosen the Bandages a little, to give free Course to the Sap.

This done, let the whole Ground be cleared

from Weeds, and the young Plantations watered.

The Seedlings not yet removed out of their first Beds will require the greatest Care. Beside Weeding and Watering, they will more and more need shading from the extreme Heat of the Sun.

When every thing is thus put in Order respecting the young Plantation, let the Gardener go round the Ground where those stand that are of a more advanced Growth, and with his Knife reduce them to Order.

Where there are Shoots too near the Bottom in those Trees intended for forming good Heads, they must be carefully taken off. All the Efforts of Nature are intended for the upper Part in these Kinds; and the Branches formed below, which are of no Use, will be of great Mischief, by draining the Juices and robbing the Head.

Evergreens, which are training to Form, will require the same Care and Management. We have got over the false Taste, which cut these into shaggy Giants, or immoveable Weathercocks; but still there is some Training necessary, for whatever Purpose they are required. These, like the other Trees, will push out Shoots in wrong Places; and some of those intended to stand will be too long: the one Kind must be cut away, the others shortened; and this is a very proper Season.

S E C T. III.

POMONA, or the FRUIT-GARDEN.

ALL Kinds of Insects which are destructive among Fruit-Trees, are now abundant upon and about them, and nothing but the most assiduous Care of the Gardener can prevent their Mischief: a little Neglect will shew him that he has dug and dung'd, and prun'd and nail'd, for these, more than his Master.

Every one knows that Vials of Syrup are to be hung at this Season upon the Trees; but these are only Baits for Flies and Wasps, which would attack the Fruit: the Caterpillar which preys upon the Leaves is often a more terrible Enemy.

We have explained the essential Use of Leaves about Fruit; and he whose Negligence in looking

after the Caterpillars, leaves them open to the Mischief, will be very sensible of the Truth of that Doctrine.

The most promising will fade and wither upon this Destruction of the Leaves; and those from which there was most Expectation will never ripen.

The careful Gardener must look well for them; he will find them singly wrapt up in the Extremity of a young Branch, or upon the young Fruit, where there is a Covering of Leaves. The most mischievous are the single green Kind; they are small, but they devour immoderately.

When

July.

When they are situated at the End of a Branch, the Juices are disturbed in their Course, and there appears a round Lump in the Place. This discovers them to an attentive Eye; but if let alone a very little Time, they eat off the Part where they are thus concealed: and this not only hurts the present Fruit, but destroys the Branch for the succeeding Year.

When they fix themselves upon the Fruit it generally decays; and often falls off. Those which are but slightly gnawn by them, and remain, never ripen well, nor have a good Flavour.

The only Security against this Mischief, is the seeking for Caterpillars with a diligent Eye, and picking them out, and destroying them. This should be at Times done from the Beginning of Spring. They infest the young Fruit when in Clusters, before the Gardener has thin'd it, and destroy vast Quantities together; and often they begin even with the Blossoms.

From the first budding of the Tree to the ripening of the Fruit, they should be fought after: at first upon the Ends of the young

Shoots, afterwards upon and among the Blossoms, which they often fasten together by a kind of Web; and at last among the Fruit, or upon the Backs of the Leaves. They are the Occasion of that falling off the Fruit which is often attributed to Blights; and he who from time to time seeks after them, will never repent the Trouble.

The other Method of decoying the winged Insects into Vials of Sugar and Water, must be also begun in Time; for after the Fruit is ripe its Smell is more inviting than the other, and they will neglect the Bait to do the Mischief.

The Article of budding which we have recommended in the Nursery, may now be very advantageously practised also in the Garden.

When the Fruit Trees against the Walls are not of the desired Kind, they should be this Week budded upon the tender Shoots.

The best Method is to put several Buds of the Kind intended to be propagated, into each Tree, and there will soon be Wood enough to cover the Walls.

July.



SECTION IV.

CHLORIS, or the KITCHEN-GARDEN.

LET the Ground where those Crops have stood, which are now gathered off, be perfectly cleared and prepared for such others as are fit for transplanting: and always let a few Days be allowed between the clearing off the Remains of an old Crop, and planting a new one.

The earlier Cauliflowers will by this Time be all gathered. Let the Ground be cleared of their Stalks, and all other Foulness; and a small Quantity of Dung from an old Melon Bed be scattered over it.

Let this be dug in; turn up the Earth a full Spade Depth the beginning of this Week; and toward the latter End level it, draw Lines, and plant in it some of the Celeri which we directed to be sown two Months ago.

The Plants will have been now about a Month out of the Ground; and this Earth thus recruited, will answer extremely well for their Nourishment.

Let the Lines be drawn upon the Bed at four Inches Distance; and when the young Plants are set, let them have a good Watering; and let this be repeated every Afternoon till they are very well rooted.

In the taking up these Plants out of the Seed-bed, they should not be drawn entirely from any one Part, but the largest taken up wherever they appear: this will thin the Remainder, and they

will gather Strength, and be fit for planting out.

The Seed-bed in which these are left, must be watered from time to time, as well as the new Plantation; and it may be proper by two more Plantations from it at ten Days Distance each, to secure two more successive Crops: this repeated Plantation of Celeri is very proper, because it soon is past its Excellence when arrived at the Time of Gathering; and thus no one Plantation is long depended upon.

This Seed Crop of the Celeri is from one of the later Sowings; those which have risen from earlier planted Seed, have been now, according to our Directions, planted out some Weeks, and are in a Condition for removing out again for blanching.

Let another Part of the Cauliflower Ground, or some other Piece cleared from a former Crop, be selected for this Purpose; and with this Choice, that as the Season is now likely to be dry, the best Soil is one which has some Moisture; whereas when it is a more advanced Time, a dry Part of the Ground is best.

The Celeri which is planted out at this Time for blanching, will get twice the Height in the tender Part in a damp, than it can in a dry Soil; and will be more delicate.

To

July. To prepare for the blanching, let the Ground be managed in this Manner:

When the Surface is level, and the Mould in order, open a Trench a Spades Breadth: dig it by Line; throw up the Mould, and then break the Earth that is at the Bottom of the Trench with a Spade. Let the Mould which is thrown up in digging this Trench, be laid half on one Side, and half on the other.

Then at four Foot Distance open such another Trench; and break the Earth at its Bottom in the same Manner.

Thus go on till as many Trenches are opened as will receive the Plants.

Take them up from the Bed into which they were transplanted from the Seed-bed; and in which they have now stood to gain a good Bigness: place them in a strait Line, in the Middle of the Trench, at a Foot Distance; and in this due Care is to be used that none of the Plants fail, nor receive any great Check in their Growth.

The Roots must be trim'd before they are planted; and the Tops of the Leaves cut off afterwards; the Earth must be carefully closed about them; and they must have a good Watering. This must be repeated as the Season requires, till it is seen that they are very well rooted, and have taken to growing.

All that will then be needful is to keep them covered as they rise in Height; and for this Purpose the Mould thrown out of the Trench is to be used as long as it will serve; and after that the Ground between the Trenches is to be broke

very fine, and used to the same Purpose. The oftener they are earthed up, the higher they will grow good. July.

The Method of doing it is to draw up the Mould carefully on both Sides, taking a great deal of Care not to bury the Hearts of the Plants, because that would stop their Growth.

By the Beginning of *September* the first Plants will be fit to take up; and with this Management they will be two Foot long in the blanched Part, and all the Way delicate and tender.

The rest of the Crops are to be treated in the same Manner; only that a Soil drier in its Nature, or made so by Art, must be chosen for them, as they are to stand through the Winter. This we have given before; and shall occasionally refer to when we come to treat of the Management of those later Crops.

The whole Ground will now require frequent Weedings; and many of the Crops will demand the Refreshment of Watering from time to time, in proportion as Nature allows fewer Showers.

A great deal of Advantage will also be obtained by a proper Manner of gathering the Products: in those which are taken up entire, whether Roots or Herbs, a careful Gardener will draw the largest first; thinning his Beds, that the smaller may have the due Advantage of coming to their Growth: in those whose Fruits only are gathered as the Bean and Pea Kind, he will pull them often; and suffer none to grow too large, for such starve all the rest.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XLIV.

For the Middle of JULY.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. SILVER AND GOLD DAFFODIL.

July.

Pl. 44.
Fig. 1.

THE Gardener has been told on several Occasions, that great Part of the Variety of Daffodils he so much admires, are seminal Changes from some common Species; not distinct Kinds. This is one of them: its Aspect is equally singular and elegant; but with all the Variation of Shape and Colour in the Flower, the Eye of the attentive Botanist, will see it is nothing more than the common wild Daffodil in an improved and varied State, as Plants are changed by Culture.

The Writers on Flowers in general have named it: they call it, *Narcissus griseus calyce flavo*, and *Narcissus maximus griseus calyce flavo*: the great grey Daffodil with a yellow Cup.

LINNÆUS, who allows neither Difference of Colour, or Fullness of Petals, to constitute specifick Distinctions, refers this to the common wild English Daffodil; and that Species he names *Narcissus spatula uniflora nectarii limbo campanulato erecto petalo equali*: one flowered Narcissus with the Verge of the Nectarium, bell-shaped, strait, and equal to the Petals. This Name is given to the single State of the Plant, in this double Flower those Characters are in great part obliterated.

The Root is roundish, composed of numerous Coats, and full of a viscid Juice.

Numb. XLIV.

The Leaves are numerous, long, narrow, obtuse, and of a pale blueish or greyish green.

The Stalk is upright, a Foot high, somewhat flattened, edged and hollow, and it bends at the Top with the Weight of one Flower. This bursts from an oblong leafy Scabbard, and is composed of six Petals, and a very long double and large Cup.

The Petals are of a very delicate shining silvery grey, and the Cup yellow. This is the natural Colouring; but sometimes the yellow runs in light Variegations among the grey, and often the grey in the same Manner spreads itself among the yellow: either way the Colouring is extremely singular as well as pretty.

The Cup which is very large, is doubled and divided also in various Manners; sometimes the Body is entire, and sometimes the whole is cut and divided down to the Bottom. In either Case the Flower is very beautiful: nor is it a slight Value it gains additionally, by the late Time of its flowering.

In this double State the Characters which should mark the Class and Place of the Plant are obliterated; but in the single one, as in the other Daffodils, there are six Filaments and a single Style, so that the Plant is referred to the *Hexandria Monogynia*.

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Culture

July.

July.

Culture of this DAFFODIL.

This rises from the Seeds of some of those large single Daffodils, which we have observed before are the original Produce of the common wild *English* Kind. They are to be sown as we have directed treating of the others; and if this grey and yellow Flower do not appear among those of one sowing, it must be sought in such as follow. The great Art to obtain these double and variegated Flowers is to sow often, and largely.

When a Plant of it is once obtained, it will be increased by Off-sets. These must be taken off every Year when the Roots are taken up; and new Compost must be always allowed. The old Root will by this be kept vigorous, and will flower in its full Beauty many Years; and the Off-sets, as they will be too small to blow at first, must be planted in a Nursery-bed at four Inches Distance to gather Strength, and afterwards removed into the Garden.

July.

2. SUSIAN IRIS.

Pl. 44.
Fig. 2.

We have had Occasion to name many of the *Iris's*, and shall describe yet some others; for there are few Flowers raised so easily that deserve so much of the Gardeners Attention.

Among the whole Series of Flowers of that Name, there is not one that demands his Attention more than this *Susian* Kind; so called, because of eastern Origin, yet freely living in our Gardens. All the Writers on Flowers have named it, and most have distinguished it, according to the Place whence it was first brought, by the Names *Iris Turcica*, *Iris Calcedonica*, and *Iris Susiana*; the *Turkish*, *Chalcedonian*, or *Susian Iris*: some have added to this the Form, Size, or Colour of the Flower. CLUSIUS, *flore majore variegato*, with a great variegated Flower; and C. BAUHINE, *flore maximo ex albo nigricante*: *Susian Iris*, with a vast black and white Flower.

LINNÆUS in this, as other Instances, has named it from the essential Characters, and consequently adapted to it Terms which cannot be applied to any other: 'tis the great Glory of this Author, that his Names are succinct Descriptions; and he who knows them, cannot but at sight know also the Plants to which they refer: he calls this *Iris corollis barbatis caule foliis longiore uniflora*: the single flower'd bearded Iris, with the Stalk longer than the Leaves.

The Root is tuberous, thick, irregular, and juicy: the Leaves are long, moderately broad, and of a fresh green. They rise six or eight together, and surround one another at the Base: they are sharp at the Points and Edges, and of a tolerably firm Substance.

The Stalk is a Foot and half high, round, thick, jointed, and of a pale green; and it supports a single Flower, the largest of all the *Iris* Kind; and when nearly viewed one of the most elegant. It is composed as those of the other *Iris's*, of six Petals; among which appear the three leafy Heads of the Style, so much resembling three others, that the Flower has been usually understood to be composed of nine.

Of the six proper Petals three turn down and three stand upward.

The three lower Petals are on their Inside absolutely black, only there run some violet purple Lines along these from the Base to the Middle; and spread themselves, though less distinctly,

through the rest.

The Middle of the Petal toward the Base is black and hairy; and in the Centre there is a delicate jetty Spot, of a Velvet Appearance.

The Outside of these Petals is of the same blackish Hue, but fainter: often tinged with a dusky purple, and often degenerating into an ash grey.

The three Petals which stand upright are waved, and curled; and they are vastly large, but thin. They are of a dusky Lead Colour, variegated from the Base to the Tops and Edges, with fine small Lines of black and greyish; and there are usually intermixed among them some small dusky Spots.

The three false Petals, or leafy Heads of the Style, are divided at their Tops; and are of a faint, though deep purplish Tinge, with a great deal of the same blackish Hue.

The whole Flower at a Distance resembles the Feathers of some *Indian* Birds, or the Skins of Serpents; for the upper Petals are mere Films.

The Flower has no Scent: Nature has done enough for it in Colouring.

The Filaments and Style are the same in this as in the other *Iris's*; three of the first place it among the *Triandria* of LINNÆUS; and the latter being single, among the *Monogynia*.

Culture of this IRIS.

The Plant is a Native of the East, whence it was first brought into *Europe* by the *Dutch* in the Year 1573. It is easily increased by parting the Roots in Autumn, but the best Method of raising it is from Seed: for the Flowers of such Plants, when rightly managed, exceed those from older Roots; and though they never vary their general Colouring, yet will afford a very pleasing Diversity in the Disposition, Form, and Bigness of the Spots.

The best Compost is a Mixture of equal Parts, Garden Mould, and rich black Earth from under the Turf in a Meadow. In this, with proper Management, the Plants will flower in full Perfection.

Let some Seeds be saved from a very strong Plant, which has stood under a warm Wall. Let them be dried in the usual Manner; and let

July. let a Bed be prepared in a sheltered Part of the Seminary, with the Compost just directed. The Spot must be open to the Morning Sun, and defended from Noon.

On this Bed let the Seeds be scattered with an even Hand, in the latter End of *August*, and covered with a Quarter of an Inch of the same Mould. When the young Plants appear, they must be weeded and gently watered; and in the End of *September* they should be taken up, and planted in another Bed at eight Inches Distance.

Here they may stand till the *September* following, and then it will be Time to remove them into the Flower Garden, for they will flower the next Year.

A Place must be chosen for them under a warm Wall, open to the East, and sheltered from the Noon Sun.

A Bed must be made for them in this Place, and they must be planted at eighteen Inches Distance. They must be carefully weeded and watered, and the succeeding Summer they will flower.

Let the finest be marked while in bloom; and in the *September* following let the Roots be all taken up, and a new Compost thrown into the

Place. The inferior Kinds may be planted out in the Borders of the Garden; and these finer Kinds kept together, in their former Place, tho' in a new Soil.

When they have been in this Manner nursed two or three Years, they may be increased by parting the Roots when taken up in Autumn for renewing the Soil; and at the same Time Seeds should be saved from one or more of the very finest Flowers; and a new Stock raised.

The old Plants are then to be removed into the common Borders, as soon as the new Seedlings come to the State of perfect flowering; but the same Place preserved for the choicer Kinds.

There is no great Trouble in the Management of seedling Plants to those who raise great Numbers, and there is no other Way to attain Perfection in the several Flowers.

The worst of these Plants will be a very great Ornament in the Borders; and so much Attention must be shewn to the Warmth of the native Climate of the Plant, even in these, that they must have a warm and sheltered Place, though in the common Mould: otherwise they will either become very weak, or absolutely perish.

3. SINGLE GOLDEN AMARYLLIS.

Pl. 44.
Fig. 3.

If the Figure on the annexed Plate did not remind the Gardener of the intended Plant, he would not conceive that by golden Amaryllis we mean the *autumnal Daffodil* of his Nomenclator. 'Tis by that Name he knows the Plant; but there never was one more given at random.

He knows the essential Character of a Daffodil is a hollow Nectarium; or in his own Language, a Cup within the Flower, but he will find none here; nor is it easy to conceive by what Infatuation they were led who first gave it the Name *Narcissus*. By this, however, it is called among the Generality of Writers. They add to it *autumnalis*, from the Time of the Plants flowering; and from its native Country, *Indicus*. C. BAUHINE adopting both, calls it, *Narcissus indicus autumnalis*; and by these Names it stands in CLUSIUS and others.

Some finding the Impropriety of this Name, have refer'd it to the *Colchicums*, which indeed it more resembles, and some have called it *Pancratium*; but not in the present adopted Sense of this Word.

Such was the Confusion under which the Science of Botany laboured till the Time of LINNÆUS. He found the bulbous Plants, more than all the rest, confounded among one another, ill joined, and ill separated; and each Way called by the most discordant Names. He set these aside; and examining Nature and her Characters alone, to his everlasting Honour, established many new Genera, and of these the Amaryllis is one.

The Gardener, accustomed to common Names,

and false Distinctions, will be astonished to read that he has brought together under this one Name, the *autumnal Daffodil*; the *Atamusea*, *Guernsea*, and *Jacobean Lilly*; the Ceylon *Lilionarcissus* of COMMELINE, and HERMANS Dwarf *African Lilly*; the oriental *Narcissus* of SWERTSIUS, and the spotted Lilly of PLUKENET. Let him look into these Flowers, and he will find that it is done with Justice: his Eye will shew him that howsoever these Names have been given the Plants by ignorant, and continued to them by unskilful Persons, there is not a Lilly nor a Daffodil among them.

He will see they all differ from the Flowers properly called by those Names; and that they all agree with one another: then shaking off old Prejudices, he will perceive his Obligation to that Author, who joined them under one Name; and will not be offended, as there was no old Denomination which suited them, that he gave the Genus a new one.

He has distinguished the present Species by the Addition of *Spatha uniflora corolla equali staminibus declinatis*: single flowered Amaryllis, with a regular Flower, and drooping Filaments.

The Root is large, bulbous, and covered with a thick blackish Skin.

The Leaves are long, moderately broad, obtuse, firm, and of a deep green. Eight or ten of them rise together from the Root, and with them a short thick Stalk supporting a single Flower.

The Stalk is green and smooth; and the Flower

July.

Culture of this DAFFODIL.

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When a Plant of it is once obtained, it will be increased by Off-sets. These must be taken off every Year when the Roots are taken up; and new Compost must be always allowed. The old Root will by this be kept vigorous, and will flower in its full Beauty many Years; and the Off-sets, as they will be too small to blow at first, must be planted in a Nursery-bed at four Inches Distance to gather Strength, and afterwards removed into the Garden.

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through the rest.

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The best Compost is a Mixture of equal Parts, Garden Mould, and rich black Earth from under the Turf in a Meadow. In this, with proper Management, the Plants will flower in full Perfection.

Let some Seeds be saved from a very strong Plant, which has stood under a warm Wall. Let them be dried in the usual Manner; and let

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Fig. 3.

If the Figure on the annexed Plate did not remind the Gardener of the intended Plant, he would not conceive that by golden Amaryllis we mean the *autumnal Daffodil* of his Nomenclator. 'Tis by that Name he knows the Plant; but there never was one more given at random.

He knows the essential Character of a Daffodil is a hollow Nectarium; or in his own Language, a Cup within the Flower, but he will find none here; nor is it easy to conceive by what Infatuation they were led who first gave it the Name *Narcissus*. By this, however, it is called among the Generality of Writers. They add to it *autumnalis*, from the Time of the Plants flowering; and from its native Country, *Indicus*. C. BAUHINE adopting both, calls it, *Narcissus indicus autumnalis*; and by these Names it stands in CLUSIUS and others.

Some finding the Impropriety of this Name, have refer'd it to the *Colchicums*, which indeed it more resembles, and some have called it *Pancratium*; but not in the present adopted Sense of this Word.

Such was the Confusion under which the Science of Botany laboured till the Time of LINNÆUS. He found the bulbous Plants, more than all the rest, confounded among one another, ill joined, and ill separated; and each Way called by the most discordant Names. He set these aside; and examining Nature and her Characters alone, to his everlasting Honour, established many new Genera, and of these the Amaryllis is one.

The Gardener, accustomed to common Names,

and false Distinctions, will be astonished to read that he has brought together under this one Name, the *autumnal Daffodil*; the *Atamusea*, *Guernsea*, and *Jacobean Lilly*; the Ceylon *Lilionarcissus* of COMMELINE, and HERMANS Dwarf *African Lilly*; the oriental *Narcissus* of SWERTSIUS, and the spotted Lilly of PLUKENET. Let him look into these Flowers, and he will find that it is done with Justice: his Eye will shew him that howsoever these Names have been given the Plants by ignorant, and continued to them by unskilful Persons, there is not a Lilly nor a Daffodil among them.

He will see they all differ from the Flowers properly called by those Names; and that they all agree with one another: then shaking off old Prejudices, he will perceive his Obligation to that Author, who joined them under one Name; and will not be offended, as there was no old Denomination which suited them, that he gave the Genus a new one.

He has distinguished the present Species by the Addition of *Spatha uniflora corolla equali filamentibus declinatis*: single flowered Amaryllis, with a regular Flower, and drooping Filaments.

The Root is large, bulbous, and covered with a thick blackish Skin.

The Leaves are long, moderately broad, obtuse, firm, and of a deep green. Eight or ten of them rise together from the Root, and with them a short thick Stalk supporting a single Flower.

The Stalk is green and smooth; and the Flower

July. Flower large, elegant, and of a pale yellow.

There is no Cup; but in the Place of one a kind of filmy Scabbard: this is oblong, flattened, nip'd at the End, and of a pale green. It bursts sideways to let out the Flower, and soon after withers.

The Flower is composed of six oblong, regular Petals, broadest in the Middle, and obtuse.

In the Centre stand six Filaments, small toward the Top, and crowned with oblong Buttons placed sideways. Underneath the Receptacle of the Flower is placed a roundish furrowed Rudiment, from which rises a single Style with a small Head, divided into three Parts.

The Seed-vessel is oval, and in three Cells contains numerous Seeds.

The six Filaments refer the Plant to the *Hexandria* of LINNÆUS, and the single Style shews it one of the *Monogynia*.

Culture of the GOLDEN AMARYLLIS.

This elegant Flower has the Merit of Hardiness: most of the Amaryllis Kind are Natives of the hottest Regions, but this bursts forth among the Grass in the Meadows of *Spain* and *Italy*, and covers the Sides of Hills in *Thrace*. It will live therefore in our Gardens with little Trouble; and as it encreases fast and freely by Off-sets, few give themselves any farther Trouble about it. They separate these when they take up the Roots; and they plant them in any Border where there is a Vacancy.

Our Gardener knows he is to act on other Principles.

Let him mark for Seed two or three of the finest Plants, which have the Advantage of Shel-

ter; and see that it ripens perfectly, for very often that is not the Case; and he will be very unlucky who loses all his Pains of sowing and protecting, by the first Error, in taking bad Seeds.

In the latter End of *March* let a Bed be made up in a shady Part of the Nursery, with fresh Meadow Earth raked clean from Stones; and on this let the Seeds be scattered with an even Hand. Sift over them a Quarter of an Inch of the same Mould, and let the Ground be defended by a Hawthorn Bush; and at Times gently refreshed with Water.

When the Leaves of the young Plants fade, let half an Inch of fresh Mould be sifted over the Bed to preserve the Roots during Winter; for otherwise being small, and too near the Surface, they would be hurt by Frosts. The next Season they will be fit to transplant at five Inches Distance; and when they have once flowered in this Place, the finest must be marked again for Seed.

There will be a great deal of Variation in the Colour of the Flower, and its Size, among these seedling Plants. The finest are those which are largest, and are of a delicate, pure, and unmix'd yellow; pale, but strong, and uniform throughout every Part of the Flower. This is the Colour of pure Virgin Gold, and thence the Plant is named.

When fine Plants are thus obtained, they may be encreased by Off-sets, and the worst of them will make a very handsome Figure in Borders.

The lesser early flowering Kind differs no more from this than as a Variety from the same Stock; and the Case is the same with the next described Kind.

4. DOUBLE GOLDEN AMARYLLIS.

Pl. 44.
Fig. 4.

The Gardener has been often enough reminded of that first botanical Lesson in his Way, that double Flowers are not distinct Species, to know this is no more than a Variety from the Seed of the Plant last described: yet he will find enough in it singular and pleasing.

In most double Flowers the Parts of Impregnation are obliterated, but in this they are extremely distinct; and the Flower, tho' doubled, retains the same Shape it had when single.

The Writers on Plants have named it with great Praise; they call the double autumnal Daffodil, *Narcissus autumnalis flore pleno*, and *Narcissus autumnalis plenus aureus*.—LINNÆUS considering these Accidents from Culture as too trivial for peculiar Names, refers it to the other.

The Root is larger than in that Kind, and has more and thicker Fibres.

The Leaves are five or six; they are broad, not very long, obtuse, fleshy, and of a very fine deep green.

The Stalk is round, thick, and three Inches

high. At its Top stands one large Flower elegantly doubled, and spread open.

The Colour is the same gold yellow with the other; and the Petals are of the same Form, but double or more than double in Number.

The Flower from this Addition of Number makes a very noble Appearance; and as Nature is rarely attentive to the ripening of Seeds from it, tho' the Parts of Impregnation are sufficiently large, it remains much longer than the single Kind in Beauty.

Culture of this AMARYLLIS.

The same Soil suits this as the former single Kind; and no new Directions need be given for raising it. From a Quantity of Seed well managed at the second, if not at the first Sowing, there will be produced one or more of these double Flowers; which must afterwards be nursed with Care, and encreased by their Off-sets.

For these a good Bed should be provided in the Semi-



Silver and Gold Daffodill



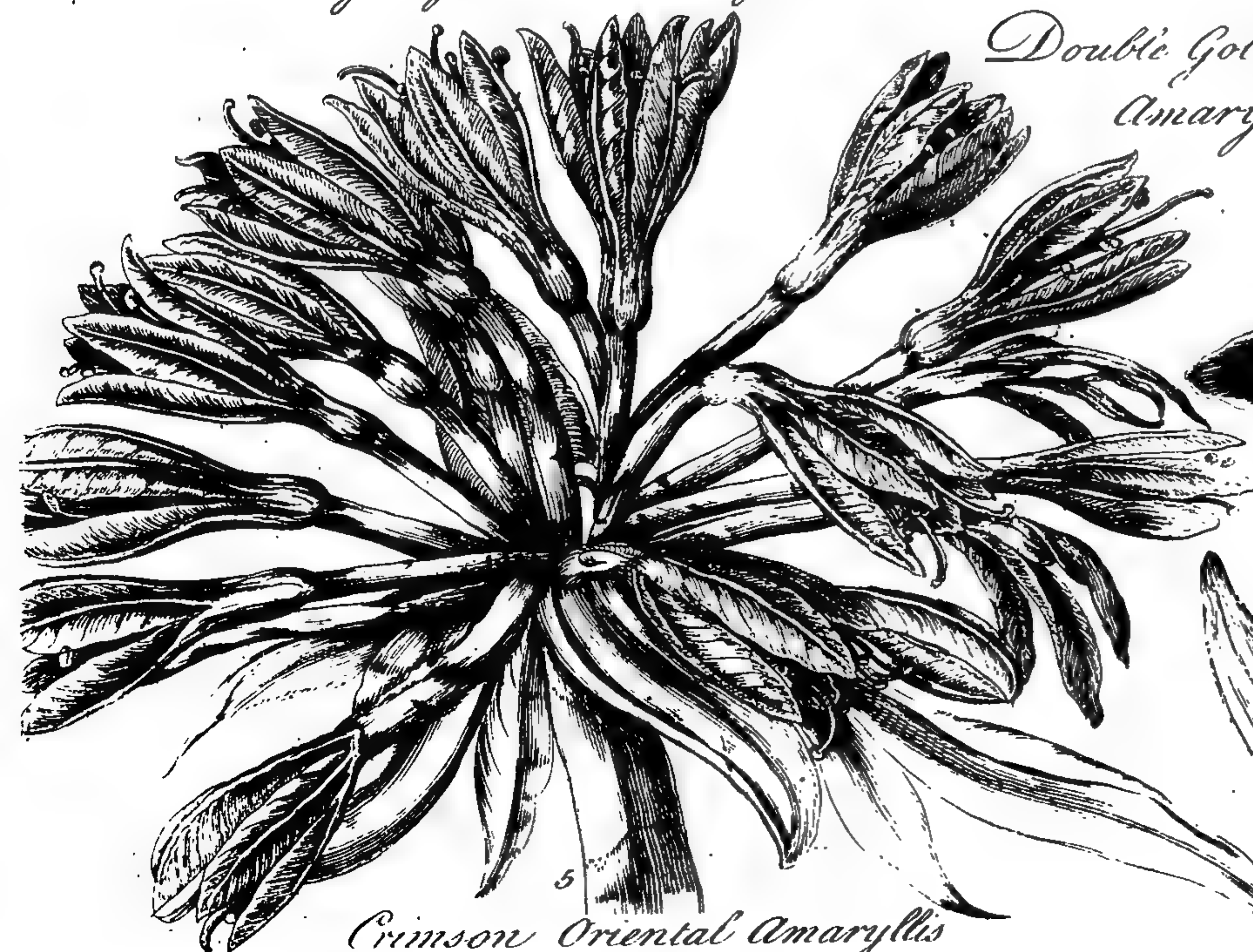
Persian Iris



Single Golden Amaryllis



Double Golden Amaryllis



Crimson Oriental Amaryllis



Peach Bloom Iris

July. Seminary. They should be separated, if ever so small, every Time the old Root is taken up; not only for the Sake of encreasing their Number, but to keep that Root in the full Glory of its Flowering.

They must be planted at six Inches Distance in the Nursery Bed, and there weeded and occasionally watered; and, when the Leaves fade, covered with fresh Mould, to shelter them during Winter. Thus they will soon arrive at Perfection, and will

flower as well as the Parent Root.

We have advised repeated Sowings of the common Kinds; and were there no other Reason, it would be proper to observe that Method punctually, for the Sake of obtaining from Time to Time a Succession of these double Flowers; for I have found that in Spite of all the Care that can be taken of the Roots, they lose their Strength after a Number of Years, and flower more faintly.

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5. CRIMSON ORIENTAL AMARYLLIS.

Pl. 44. The Reader has seen with how much Justice
Fig. 5. LINNÆUS ranges together several elegant Plants under the Name *Amaryllis*: this, for its Singularity and Beauty, may claim the Preference against most of them; and perhaps yields to none.

The Botanist would wonder to see this Species called by the common Writers a *Narcissus*, had we not just shewn the *golden Amaryllis* under the same Denomination: he will perceive the Flowers of this, though perfectly unlike those of all the Daffodils, are altogether like those of that elegant low Plant, except in Colour; though widely distant in their Manner of Growth; and he will as readily applaud LINNÆUS, who joined them under this Name, as he will censure those who could confound them with the Daffodils. They only who first saw the Plant were guilty of this Error: those who followed named it *Lilio-narcissus*.

SWERTSIUS called it *Narcissus Indicus Orientalis*; and FERRARIUS, *Narcissus Indicus sphericus, flore liliaceo*: the round-headed Daffodil, with liliaceous Flowers.

MORISON calls it *Lilio-narcissus Indicus maximus sphericus, floribus plurimis rubris liliaceis*.

LINNÆUS, who has rightly joined it with the *Amaryllis*, adds, as the Distinction of the Species, *spatha multiflora, corollis inæqualibus, foliis linguiformibus*: Many-flowered *Amaryllis*, with Tongue-like Leaves and irregular Flowers.

The Root is very large, round, swelled out in the Middle, covered with a thick Skin of a brown Colour; and sends from the Base numerous very thick and long Fibres.

The Leaves are oblong, broad, obtuse, and of a fresh green with a Tinge of greyish.

The Scabbard which contains the Flowers bursts from the Ground entire; very large, oblong, pointed, and tinged strongly with Scarlet, or with Purple.

As this raises itself above the Ground, the Stalk appears, and by Degrees attains the Height of fourteen Inches: it is flatted, very thick, and of a lively green; more or less coloured with that elegant Red which was at first so conspicuous upon the Covering of the Flowers.

Before the Stalk has attained half its Height, the Scabbard bursts; and the Flowers appear in their large Buds close compacted into a Kind of Conic Head. Soon after the Covering has burst,

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they begin to separate; and at length form a vast and very noble Head, nearly of a spherical Form: some continue erect, or nearly so, while others throw themselves off obliquely, and some hang downwards. These all rise together from the Head of the Stalk; where there are also placed some redish Films.

Every Flower has its Footstalk; and these are three Inches long; flatted in the Manner of the main Stem, and tinged like that with a lively Red.

The Flowers themselves are large, and of a very delicate Red. Each is composed of six Petals; five of which naturally turn a little inward, and the sixth separating from them stands outward. This is what occasions LINNÆUS to call it an irregular Flower.

In the Centre stand six Crimson Filaments, crowned with large yellow Buttons, and surrounding a single Style, whose Head is divided into three Parts.

Each Flower is succeeded by a large Seed-vessel; and even these make no mean Appearance.

The six Filaments and single Style refer the Plant to the *Hexandria Monogynia* of LINNÆUS, as evidently as the Form of the Flower to the *Amaryllis* Kind.

Culture of this AMARYLLIS.

This elegant and noble Species is a Native of the *East-Indies*; and with us will never flower so perfectly as in a Stove. The Seeds are to be obtained from its native Place of Growth for Propagation; or the Roots brought thence: for when taken up at the Time of the Leaves fading, they will bear to be brought over very well.

The Gardener in general gives himself less Trouble: Off-sets are produced from the Root freely enough, and from these he propagates the Plant: we know that it will flower also without the Stove; but not in its Perfection; and 'tis a Plant too noble and too elegant to be impair'd by the negligent or unskilful Hand of the Gardener.

The Method by Seeds is tedious and precarious: but if they have been collected in the *Indies*, from good Plants, and well hardened, they will keep good, and will grow in a Pot of fine

6 R

Mould

July. Mould plunged in a Bark-Bed: and they must thence be removed into the Stove.

The Roots brought over from thence, tho' they also often miscarry, are a better and securer Method. When these are received, they must be carefully cleaned, and a Pot of moderate Size must be prepared for each of them. Two or three Pieces of loose Gravel must be thrown into the Bottom of the Pot, to keep the Hole, for the Discharge of Water, from stopping up; then the Pot must be filled more than half with some of the light rich Composts; and the cleaned Root set upright, and more of the Compost thrown in, till it is covered three Quarters of an Inch.

In this Situation it is to remain, with now and then a very little Water, only to keep the Mould from being too dry, till it begins to shoot. If the Season be favourable, it will do best all this Time in the open Air, in a warm sheltered Place.

From the Time that it begins to shoot, more Water is to be allowed; but still in Moderation; and as soon as the Weather grows cool, it must be removed into the Stove; and from this Time it must be allowed often a little Water. It will thus be brought easily to Flower.

After a Year or two the Root will produce Off-

sets; and these must be managed with great Care.

Every Year the old Root must be taken out of the Pot, and clean'd; and as soon as the Off-sets have been taken off, it must be planted again in fresh Compost. The best Season for this is about a Month before the shooting of the Leaves in Spring.

The Off-sets separated from the old Roots, must be managed just as those Roots were at first. They must be planted with great Care in Pots of the same Compost, and set in a Hot-Bed of Bark. The Mould must be in these refreshed occasionally with Moisture; and a little Air must be allowed in good Weather.

When they are thus brought to a Condition of Flowering, they must be taken into the Stove; and to keep them in perfect good Condition, they must be set in the Bark, and continued there throughout their whole Time: they will flower any where within the Air of the Stove, but their full Perfection is never seen, unless when they are in Pots up to the Rim in the Tan, and at Times watered.

The Season of Flowering in this Plant, when kept in the Stove in this Manner, is quite uncertain; but on that must depend the Management of the Roots, and the whole Regulation.

6. PEACH-BLOOM IRIS.

Pl. 44. The Dwarf *Iris's* are not the least specious of that Kind of Flower; nor is this inferior, in the Delicacy of Colour, to any of the plain Kinds. It is a Plant of easy Culture, and worth a Place in every Garden.

Fig. 6.

The Writers on Flowers in general have named it: they call it *Chameiris purpurea*; and *Iris humilis purpurea*; and *Iris latifolia flore rubello*.

LINNÆUS joins it to the Violet Kind, which he distinguishes from all the others, by the Name *Iris corollis barbatis, caule foliis brevioris unifloro*: Bearded *Iris*, with one Flower upon a Stalk, lower than the Leaves.

Though a low it is a very shewy Plant; and in this pale Colouring is very conspicuous.

The Root is tuberous, thick, spreading, and whitish.

The Leaves are numerous, and of a very delicate green; broad, short, obtuse, and highly rib'd.

The Stalk is very short, but thick, rib'd, and irregular. The Flower stands on its Summit, and is very large. It is composed, as those of the other *Iris's*, of six Petals, and three leafy Appendages to the Style; and is of a very fine pale Crimson.

The Petals are firm, and the whole Flower is permanent, and of a very fine Violet Scent.

Three of the six Petals hang more or less downward, and the others stand upright, and close toward upon one another.

Toward the Base of the lower Petals is placed

a long and large bearded Nectarium; and above these stand the three long Heads of the Style, which are usually counted by those who have not study'd the Science, as so many other Petals.

The natural and proper Colouring of the Flower is to be throughout pale Red. The three Petals which fall downwards are the palest; the three which stand up have more Crimson; and the three Heads of the Style are of a fainter Colour than these, but have the same Kind of Tinge.

This is the proper Colouring of the Petals, but with this there is always the Addition of the bearded Nectarium, which is thick and of a violet blue; and near it there is on each of the lower Petals a yellow Spot.

Culture varies the Colouring of the Petals greatly, but these Characters always remain: the whole will be changed in the Tinct from this pale Red, one Way, through all the Stages of fleshy Blushing, to absolute White; and the other through all the deepening Reds, to absolute and full Purple: and sometimes the upper Petals will be streaked or variegated.

One Observation shews LINNÆUS has not erred in refering this to the more usual Violet Kind, which is the Scent. It is always perfum'd, but most in the deepest coloured Flowers: as they grow paler the Scent is less; and in the White is nearly lost.

The Characters are the same in this as in the *Susian*, and other Kinds: there are three covered Filaments, and a single Style with this great

July. great trifid Head. These refer it to the *Triandria Monogynia* of LINNÆUS, his third Class and its first Section.

Culture of this Iris.

The Propagation and Management of the tuberous *Iris's* is much alike; nor need we repeat here what we have directed concerning the *Suffian* and other Kinds. All that is particular relating to this, is the delicate Colouring of the Flower, which must be preserved by a light Soil, and by avoiding too much Moisture.

I have seen the Roots of this produce deep violet Flowers, only from being two or three Seasons planted in common rich Garden Mould, and thoroughly watered, by an unskilful Gardener.

The best Method of managing the Plant, is with the common Regulations, only to give very little Water, and to mix a Peck of dry Sand with every Bushel of the Compost: in this, Seeds of the common Violet Dwarf *Iris* are to be sown, or of some good Flower of this pale red Kind

before raised from such Seeds.

July.

The Method is to sow a large Quantity; and among the Plants which rise, there will always be a Variety of Colouring; from these the palest are to be preserved for Seed, and that sown again.

When the Plants raised from this, are of a Bigness to be brought into the Garden, a Bed must be prepared for them in some Place where they may have a great deal of Sun, but not that of the full Noon-day; and the Compost being thus lighten'd by a Mixture of Sand, they must be planted at a very slight Depth, and the stirring of the Ground about them, must in general serve instead of Watering.

The Dews will be thus detained in the Mould; and they are the proper Refreshment of this delicate Flower. If the Soil at any Time become so dry that it visibly declines, a little Water must be allowed: but let the Gardener, as an everlasting Rule, keep in Remembrance that the Delicacy of the Flower depends upon the Roots not being too coarsely nourished.

C H A P. II.

The Care and Management of the Ground.

THE Borders being all clean and in Order, this Week let the Gardener continue his Care in saving the Seeds of Plants as they ripen: let him once in two or three Days go over the Ground, and take from every Plant those Heads or Pods which are mature.

The Rule to know this, is to observe that the Seed-vessels, or the Seed, if naked, are of their full Bigness, and are a little loose. They are usually firm in their Places while the Juices are flowing into them; but when Nature has done her Work, and they only stand to harden, they begin to grow moveable.

Let him make a Distinction when those in Pods are gathered, between such as are to be sown in the succeeding Autumn, and those which are to be kept till Spring.

The former Kind, after they have lain some Time upon the Shelf in the Pods, must be shook out, and spread separate and naked; but those which are to be preserved through Winter, are best kept in the Pods.

For these there is most Attention required, for they have the longest Time to be kept out of the Ground; and that the most precarious, because of the Variety of the Seasons.

They must be thoroughly dry'd, and it must be done very gently. If they are laid in the Sun, as I have known some practise, the Principle of Vegetation will be extremely weakened or destroyed; and if they be put up damp they will grow mouldy, and that Way be spoiled. The true Method is to allow them Time enough, and Room enough.

It is a common Observation among Gardeners,

that certain Seeds if kept till the following Spring will not grow. They are therefore directed to be sown in Autumn, though contrary to the Nature of the Plants.

I have found by repeated Trials in these Kinds, that there is nothing in the Nature of these Seeds to prevent their being kept good through Winter, and growing in Spring, but that the Unskilfulness of the Gardener has destroyed that Principle of Life in them, which Nature would under a better Regulation have very well preserved.

On examining Seeds of these several Kinds in the Gardener's Seed-Rooms, I have shewn them the Marks of their having been many Times damp, and dry again, during the Course of the Winter. Every Time they grew damp, there came on a Fermentation: and there is no Probability that so tender a Thing as the first Bud or Rudiment of a Plant, contained in its Seed, could stand these Injuries unhurt.

This is the Cause of these Seeds failing in the common Way; and the Gardener will find it a great Advantage to understand certainly how to preserve them: it depends entirely upon this hardening of them; for when once they have been thoroughly and properly cured, they will not be subject to Damps afterwards.

The Method is to spread them in the Pods at considerable Distances, one from another, upon a broad Shelf or Table covered with Cartridge-Paper, and with a rais'd Ledge of the same Paper carry'd all round, to prevent their blowing off. In this Place they are to lie a Fortnight, or longer, according to their Bigness; and every Day they are to be moved about: the Room must have a thorough

July. thorough Air; but the Pods must not be exposed to the Sun.

In this Time they will acquire that Hardness which will preserve them from slight Accidents of Damp; and to prevent this farther, they must not be put up in Drawers, as is the usual Way, nor all in one large Parcel.

To preserve Seeds in a Condition to vegetate, free Air is the great Article, and this they are deny'd in that confin'd Way of laying them up. On the contrary, let the Quantity, if large, be divided into three or four Parcels, and each tyed up in a Bag of Cartridge Paper. Let these Bags be hung up in the Air in the same Room where they were dry'd.

The best Way is to draw several Lines across the Room, a Foot and half below the Cieling, and two Foot distant from one another; and the Bags being first written upon, to shew what they contain, should be ty'd up to these Lines a Foot asunder.

The Air will thus play freely about them and among them, and the Pods will preserve them from Injuries: they will remain in good Condition a great while; and some which I have kept by way of Experiment, have been very good four Years.

There is no Way in which Seeds can be kept in every Respect so conveniently as this: beside their being liable to Damps and to Heat, when laid in great Parcels together in Drawers, they are often eat by Insects. In this Way they take up little Room, and they are free from all Kinds of Accidents.

These are the Advantages we have found from preserving Seeds in this Manner; which we have named at this Time, because 'tis now to be put into Use; and we need not tell the Gardener how

July. great the Advantage would be of being secure of always preserving those Seeds through Winter, which shoot soon after they are put into the Ground.

In all these Matters Nature is to be the great Guide; and we see in her Œconomy how vastly serviceable a free Air is to preserve the vegetative Life in the Seed, and prevent Accidents.

In many Cases, the Seeds intended for falling to the Earth in Spring, are preserved thro' Winter in their dry'd Pods upon the dry Stalks of the Plant. The Rains wet them, but the free Air dries them again, and there is no Disadvantage. The rough Winds of Spring blow them off, and they shoot. These naturally drop'd Seeds have many Disadvantages, to which those sown by the Gardener are not liable; but with the free Air about them all Winter, they succeed against them all.

Every Week therefore as the Seeds ripen, let the Gardener lay them upon the Shelf to dry; and where there are many Kinds, he will do well to divide every Shelf by Ledges of the same Paper, into several Partitions.

As one Parcel of the same Kind dries, let it be ty'd up separately in Bags, and these wrote upon, and fixed in their Places: thus every thing will go on regularly; and he who bestows this Degree of Attention on the Subject, will make few Complaints.

All the Time Seeds are thus gathered from such Plants as are ripening them, let those in Flower, and those which are taking their Growth for Flowering, be watered with Care: those in Flower a little at a Time, and often: those, whose Growth is the principal Object of Attention at present, more. This we have explained under the preceding Articles in our last Number.



S E C T. II.

The Management of the NURSERY, for this Week.

Nothing farther will require to be done in the open Flower Ground for the present Week; we shall therefore proceed to the Nursery, and consider the Management and Encrease of those more tender Shrubs and Plants of foreign Growth, which we preserve in Stoves and Greenhouses.

Many of those will bear to be propagated by Cuttings, and there is no Way so easy. This is the Season, and the Manner must be varied according to the different Kinds.

The Gardener who would rationally go about this Work, must consider his Exotics according to their different Degrees of Hardyness, as of two Kinds; the first comprehending such as will bear our open Air the best, and the other the more tender.

This is a very essential Distinction; for the Temperature of Mould in our Gardens being the

same with that of the Air, or at least dependent on and regulated by that, those Plants which in their State of Growth will not endure the Chillness of our Air, will not in the Cuttings send out any Roots in the cold Ground.

This throws the Management of Exotic Cuttings into two Regulations: the first or hardier Kinds, will strike in the common Mould, provided it be good, and they have due Attendance and Shelter. The other or more tender Kinds will not strike, unless the Mould into which they are put, be heated by Dung beneath.

The hardier Kinds therefore are to be raised in a Bed of good Mould, the others on a Hot-Bed. We shall lay down first the Method of treating these, and afterwards that of the other, in which there is little essential Difference.

Chuse

July.

Chuse a Part of the Ground that is defended from cold Winds, and mark out a Bed of four Foot in Breadth; and of a Length proportioned to the Quantity of Cuttings intended to be rais'd. Dig out the Mould a Spade Depth, and fill the Place with a Mixture of equal Parts of very fine Garden Mould and fresh Meadow Earth. Mix these well together, and throw them into the Place. Let so much be used that the Bed may rise three Inches above the Surface.

Draw two Lines lengthway of this Bed, each at fifteen Inches from one of the Sides; and the Bed being thus prepared, take off the Cuttings. These may be all cut at once, and by good Management all planted the same Evening.

Let the Gardener remember that 'tis only the hardier Exoticks he is to plant in this Bed, but let him take Cuttings from as many of these as he chuses to propagate, in the following Manner.

With a sharp Knife let him cut them from the Plants at some Place just below a Knot, or Joint, sloping them off downwards in the Cutting. The best Length for them is about ten Inches, but in this the Practice must be in some degree regulated by the Disposition of the Joints.

Let a Slit be made in each through the Body of the Joint, and two or three Holes pierced through the Stalk above and just about this Place.

Let Trenches be opened in the Place where the two Lines are drawn along the Bed, of so much Depth as to hold the Cuttings within an Inch and half of their Tops.

Lay the Sides of the two Trenches which are toward the Edge of the Bed, gently sloping; and beat down the Mould a little with the Back of a Spade, but not too much.

Lay the Cuttings upon this sloping Side of the Trench at four Inches Distance, and throw in the Earth, pressing it about them with the Hands from Time to Time as the Place is filled up. In the End let all be made level, and the Tops of the Cuttings left an Inch and half out of the Ground.

Give a very good Watering; and after this as it will disturb the Mould a little, draw some as soon as it is dry again from the Middle of the Bed; and cover up the Cuttings as at first, till only an Inch and half is left above Ground.

Place Hoops at moderate Distance over the Bed; and lay some Canvass ready for drawing upon them as Occasion requires.

The Evening of a cloudy Day should be chosen for this Business, and for the first three Nights the Bed must be covered with the Canvas, as also in the Middle of the succeeding Days. After this the Bed must be always uncovered at Night, and only shaded during the Heat of the Day.

The Waterings must be repeated often, but not so largely as at first; and in this Manner scarce one cutting in a Plantation will fail.

In five or six Weeks they will be rooted, and soon after they must be taken up, and planted in separate Pots of such Soil as we have directed to be used for each Kind under its proper Head.

A great deal of Care is required in taking them up. The Pot must be placed near, with

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some of the proper Mould at its Bottom.

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The Cutting must be taken up with a good Quantity of the Earth about it, and placed upright in the Pot; and the rest of the Compost must be immediately thrown in, and closed about it; partly to cover up the extream Fibres before the Air withers them; and partly to keep the former Mould about the Plant.

There depends a great deal upon the keeping a good Quantity of the Mould in which the Cutting grew, about it; and this will be the easier to be done; if due Care be taken for some Days before; to keep the Mould in a due Temper.

If it should be dry and crumbly at the Time, there would be no Possibility of any remaining about it; but if the Gardener water the Bed every Day, the Mould will get a Dampness, by means of which it will hang together; and by the Help of cutting through it on each Side and below, and moulding it a little in the Hands, there will a very good Ball of it hang about the Plant.

As soon as the Cuttings are thus got into the Pots, and the Earth is settled about them by Watering, they must be set in a warm shady Place, and the Watering repeated as Occasion requires, till they are very well rooted in the new Earth, and have a lively and flourishing Aspect. They may then be allowed a little more Sun, but not at Noon; and they must not be this Year set out among the others.

In the latter End of *September* they must be brought into the Green-house, and they will thus stand the Winter among other Plants, and afterwards will be in no Danger.

This is the Management of the Cuttings of the hardier Exoticks; and the Difference between this, and the Care of those which require additional Heat, is easily understood.

When the Gardener has laid these several Kinds, let him prepare a hot Bed of slight Structure for the others.

In a warm and well sheltered Part of the Nursery let him mark out the Form of the Bed four Foot wide, and of such Length as the Number intended to be raised requires.

Let him bring in some Horse Dung that has lain in a Heap nine Days; and digging the Mould away two-thirds of a Spade's Depth, let him level the Bottom, and throw in the long Straw from among the Dung. He needs not be very nice about this, only let him use a Fork for the Purpose, and the longest will naturally come up first.

This being laid even, and pressed down a little by Strokes of the Fork, let him throw on some more of the largest that is left, and so finish up with the small, which is almost pure Dung.

The Bed should be two Foot high above the Surface of the Ground. Let him lay a Foot Thickness of pure Mould upon this; and driving Stakes into the Ground on both Sides, that shall rise two Foot and a half above the Surface of the Mould, let some Rails be nailed over the Bed to their Tops, so that a Canvass can be drawn at Pleasure over the Bed, without crowd-

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ing

July. ing too much upon the Cuttings, or choking them for want of Air.

All being thus ready, let a Couple of Trenches be opened along the two Sides of the Bed, in the same Manner as was done on that in the common Mould; and let the Cuttings from these tenderer Kinds be taken off in the same Manner as directed there, in the Plants and Shrubs of common Growth; and from the others in the Way we have ordered under each particular Head.

The Mould must have laid five or six Days upon the Bed before the Cuttings are planted; and the Evening of a mild cloudy Day must be chosen for that Purpose.

The Work must be done expeditiously; the Earth well closed about the Cuttings, and a moderate Watering must be given.

After this the Bed must be covered up with the Canvass, and only a little Air admitted occa-

sionally at the Ends till the Cuttings are perfectly rooted. July.

These Waterings must be repeated constantly every Evening; and the Mould drawn up afresh about the Plants, when it has happened to be washed away.

When they are rooted, they must be allowed more and more free Air in the Middle of hot Days; and when they are strongly established, they must be taken up in the same Manner as the others, and planted in separate Pots of such Composts as we have declared most suited to them.

They must be watered when thus planted, and the Pots are to be set upon the Hot-bed, and covered with the Canvass till the Plants are perfectly well established. Then they are by degrees to be hardened to a little Air in the Noon-time of the Day; and afterwards according to their Condition, to be removed into the Stove, and nursed as other Plants.



S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

C H A P. I.

Products in Season.

THE Reader will remember by what slow Degrees the Catalogue of Summer Fruits has been enlarged till this Time; but the Weather approaches now which Nature purposed for the ripening of them; and we shall from Week to Week find continual Encrease.

Cherries come in abundantly, and many of those which now ripen are of very fine Kinds. The later Dukes are in Perfection, and the Carnation Cherry comes in; the Umber Heart, the Great Heart, and Gascoign's Heart are all fine Cherries; the Spanish White is also a good Cherry of this Season.

To the Peaches we have named before, may be now added the true Troy Peach; and the Royal Anne, will be now in tolerable Perfection.

The Masculine Apricot will be in very fine Order at this Time under the Hands of a good Gardener; and, with good Care, the Transparent, which is a better Fruit: it is a larger Apricot, and is of a very pale Straw Colour.

The Fruit of these two Kinds depends more

than any other upon the Skill and Care of the Gardener; for unless the Trees are extremely well managed, they afford very little.

The Masculine comes into bloom early, and the Blossoms adhere but slightly to the Branches, so that the rough Winds of that Season easily throw them off; and as they are tender, the Frosts easily destroys them.

We have directed in what Manner the Branches of tender Kinds are to be sheltered at early Spring; and if this has not all the Gardeners Attention, its Produce will be very small.

The Management of the Transparent Kind depends upon an earlier Care: right planting and good pruning. If the Soil in which this Tree is placed be cold and heavy, the Ends of the young Branches will decay in Spring; and the Fruit will never come to its true Flavour.

The Time of the Products is therefore in this Matter greatly dependant on the Care of the Trees; and one Part of our Design infers another.

July.

July.

C H A P. II.

The Care of the Trees.

THE Preservation of the Fruit from Insects is now the great Article of the Gardener's Attention; and he must continue his Assiduity on every Head, as we have directed in the preceding Weeks. Indeed he may the more freely do this, as there is little else required at the present Time of the Year.

The Ground he has dug, dressed, and from Time to Time cleared. The Trees are, according to our Instructions, clean from Moss; and the Danger of Frosts and nipping Winds is over; he has proportioned the Quantity of Fruit in every Instance to the Strength of the Tree; and nothing is required of him but to protect from these Devourers, what Nature is favourably ripening.

Three Times a Day let him look over the Trees; at Noon for the Destruction of Wasps and Flies; and in the Morning and Evening for that of the Snail, Slug, and other creeping Insects.

This taking up but a small Portion of the Gardener's Time, we shall recommend to his Care, for this Week in a particular Manner the Care of Standard Vines.

We have already at large directed him in what Manner to prune, defend, and thin those nailed against Walls: but these being exposed without that Shelter behind, will require a particular Management.

The redundant Growth which we directed to be reduced some Weeks ago in the Wall Vines, will now require to be taken off here.

All those irregular Shoots which the Plants have thrown out, must now be cut away; that the Fruit may not be starved by the Derivation of the Nourishment thither, or shaded so much by this Redundance of Leaves, as not to be able to ripen. Some Shelter we know is required; but we know also that too much is utterly destructive.

The true Management now is to take off these useless Parts with Discretion; and from the Period of their first springing to this, they should be rub'd off at their first Appearance.

The Stems and Branches must be secured to the Stakes wherever they are loose; and when the Gardener has done this, he is to clear away the Weeds.

The best Method is by tearing up the larger Growth by Hand; and then digging up the Ground between the Rows with a Spade. This tends more than any thing else to the perfecting of the Fruit.

The Business now is to give them their full Growth, and this can only be done by a due Supply of Nourishment, which will be better given by this digging than any other Way.

There is a double Use in the destroying the Weeds from between the Rows of Vines; for they not only exhaust the Nourishment which should be sent up to the Fruit, but they choak up the Place, and they exhale a moist Vapour; both very hurtful to the Vine.

The free Passage of the Air between and among Fruit Trees, every one knows is an essential Article toward their obtaining their true Flavour. It is in nothing more needful than in Grapes; and added to this the Dampness occasioned by choaking the Air with their Perspiration, makes it impossible for the Fruit, though every other Kind of Care have been bestowed upon it, should attain any Perfection.

We complain that our Seasons do not favour the ripening of Grapes; but our Management of them, whether in the Vineyard or against Walls, is indeed more the Cause than any Thing in the Climate.

S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

A Great Part of the Gardener's Care in this Quarter of the Ground, will be for the watering of his various Growths. The Kitchen Garden which has been properly managed, abounds

at this Time with Crops of Seedlings; and others that have been transplanted into their second or third Beds: the Success of all these depends in a very great Measure upon Moisture; and if the

Clouds

July. Clouds withhold it, which is too common at this Season, the Hand of Industry must supply the Place.

Let him grudge no Trouble on this Head, for without due Watering, all he has done before will come to little.

Where Weeds have risen since our last Directions, that Work must be again carefully repeated; especially among the transplanted Crops.

The breaking of the Earth for receiving them, will necessarily have favoured the Growth of Seeds brought in by the Winds among them, and they will at once choak and starve the Plantation.

This general Method taken of supplying Moisture to all the Crops, and preventing Weeds, which would rob them of their Nourishment, the Care will turn upon destroying their common Devourers. These are of many Kinds, but no one is so terrible in its Havock of the Kitchen Garden Products as the Slug. The wet Mornings and the Dews of Evening entice out these, and at those Seasons the Gardener should never fail to go the Rounds to destroy them.

The general Care thus taken of the Ground, and of its Products, let him consider what Part of it can next be cleared to make way for a new Plantation.

The Turnep rooted Radish is a Favourite with many Palates, and no Garden should be without it. This is the Time for sowing it.

The finest Season for taking it up is the latter End of Autumn, and that which is sown at this Time will be of a very good Growth at that Season.

The Onions intended for Winter Use will be now fit for taking out of the Ground. Their Leaves will be withered, and that is the Gardener's Notice for doing it.

A Piece of Ground cleared of these, will, with

a little Refreshment, perfectly well suit the Radishes we have mentioned, and the two Works may be done in a proper Succession.

The Onions must be taken up carefully, carried in without bruising, and spread to harden. A great deal in the essential Article of keeping this valuable Root, depends upon the right Management of it now.

As soon as the Onion is arrived at its full Growth, the Leaves shew the first Sign of decaying, drooping and withering: this is the Time for taking the Roots up; and it should be so well watch'd, as to do it before the Blade is quite withered off.

When they are carried off the Ground, the End of the Leaves must be nipped off, and the Roots spread abroad upon the Earth in a dry Place, and at a good Distance from one another. Every Day they must be turned or moved about, and thus kept drying about sixteen Days.

After this they may be laid up for the Winter, but in this also there requires a great deal of Care. If they be taken in on a rainy Day, the Moisture hanging about them will be very hurtful afterwards.

If any have been bruised in taking up, or in bringing in, they must be thrown away, for they would infallibly taint the rest.

The perfect ones must be cleaned from any Remainder of Mould, and laid up not too thick.

With all this Care some of them will often taint; and to prevent Damage from these, for it is an Infection that spreads very quick, they must be looked at once in a Fortnight; and if there appear any decayed ones, they must be taken out.

While the Onions are hardening the Ground must be dug up with a little old Dung, and it will be fit for the Radish Seed.

July.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XLV.

For the Latter End of JULY.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. The DOUBLE RED ROSE.

July.

Pl. 45.
Fig. 1.

THERE has been no Time of which we have Account wherein the Rose has not been celebrated : the Glory of Flowers, the Favourite of Mortals; and in the romantic Forms of antient Expression, the Delight of Gods ¹. They crown'd their Priests with it for Sacrifice; their own Brows for Festivity ². They strewed it upon the Tombs of their Heroes; and covered with it the costly Marbles on which they placed their Wines ³. Beds of Roses were the luxuriant Couches of Repose of Lovers; and we understand in what Conflicts he had Honour who slept encompassed with their Sweets ⁴.

That more modern Taste holds them in equal Respect, is seen in the innumerable Variety we have introduced by the Arts of Culture, in Form, Colour, and Fulness of the Petals.

We do not esteem Roses less than the earliest Ages did, but we have more Flowers for our Ad-

miration; and the Wonder is rather, that any one Kind can retain so much of our Regard among that Multiplicity, than that this has not more.

The Species particularis'd in this Place, the Double Red Rose, is fittest of all to lead the Student and the Gardener together into the original State of the Flower; and the Effects of Culture: for it is sufficiently raised above the Hedge-Rose, to be esteem'd a Garden Flower; and yet has no more than Fulness and Colour, to distinguish it from the wild Plant in that State.

All the Authors who have written on Plants, have named it: they have called it *Rosa rubra*; with various Additions from the Condition of the Flower, *flore simplici*, *flore semi-pleno*, and *flore valde pleno*: the Red Rose, with a single, semi-double, or perfectly double Flower.

LINNÆUS, by a much more determinate Name, calls it *Rosa caule aculeato, pedunculis levibus semi-*

July.

¹ Ρόδου ὡφερίστον αὐθός
Ρόδα δ' ἔθεισι τέρπνα. ANACREON.

² *Me juvat & multo mentem vincere Lyæo*
Et caput in vena semper habere rosa. PROPERTIUS.

³ *Et latet injecta splendida mensa rosa.* OVID.

⁴ *Victor odorata dormiat inque Rosa.*

July. *pinnatis glabris*: the prickly Rose, with smooth Footstalks to the Flowers; and smooth and semi-pinnated Cups.

This Author himself acknowledges the specific Characters very obscure among the Rose Kind; nor is this strange when we consider how Culture changes them. This Name expresses the proper Distinctions of the Red Rose when in its genuine and unaltered State; and however much Luxuriance of Soil and repeated Culture may vary the Characters in particular Plants, still there will remain enough to shew what they were, and whither the Plant is to be reduced.

The Distinctions of Colour our Student knows are nothing more than Variety and accidental Sports of Nature.

The common double Red Rose thus characteris'd, and distinguish'd from others, is a small and weak Shrub.

The Stalks are weak, and of a deep Olive Colour when old; the young Shoots are more green: they have only a few weak Thorns; and on the tenderer Branches scarce any.

The Leaves are placed on long Footstalks, which have a kind of leafy Appendage at their Base; and they are of the pinnated Form. Each is compos'd of one or two Pairs of Pinnæ, with an odd one at the End; and these are broad, short, roundish, and sharply ferrated. They are of a deep green on the upper Side, and paler below.

The Flowers have long, round, and green Footstalks, without Prickles, and they are large and noble. The Multiplicity of their Petals, their various Turns and Foldings, and the deep and glorious Red of the whole Flower, are great and distinguish'd Marks of Beauty; and they have a very fragrant Scent, tho' inferior to the Damask.

The Multiplicity of Petals does not obliterate the Characters of the Clafs, for a Number of yellow Heads are seen in the Midst: but these are best traced in the plain and simple State. We shall therefore refer the Student, who would rightly understand the Character of the Rose, to a single Flower.

The Cup is formed of one Piece, thick at the Base, where it is rounded; and thence opening into a bell-shaped Head, from which run up five long Segments; broadest at the Base, narrower to the Point, and of a pale green, covered with redish Hairs. Of these five Segments, two have Appendages on both Sides, one only on one Side, and two others are naked. These different Segments are placed alternately: but Culture often obliterates their Distinctions.

The Body of the Flower, in this natural and

July. simple State, is composed of five Petals; these are broad, large, and fixed to the Cup: as are also the Filaments in the Centre. These are very numerous, short, and slender. They make a Kind of Ring round the Neck of the Cup, and are crowned with three-corner'd Buttons, which form in the Midst of the Flower a vast thick Cluster.

The Rudiments are numerous, and placed in the Centre of the Cup: from every one there rises a single, short, and hairy Style, and these are close pressed together by the Neck of the Cup, crowned with obtuse Heads, and inserted on the Sides of the Rudiments.

When the Flower falls, the Neck of the Cup draws up closer, and its thick Body becomes a Fruit, containing numerous Seeds, and crowned with the Remains of the Segments.

The many Filaments, inserted in the Cup, and the numerous Rudiments of the Seeds with their Styles, shew the Plant one of the *Polyandria Polygynia* of the LINNÆAN System.

We overlook Things which are familiar; but there is something in this Fructification of the Rose very worthy of Attention: A Cup forming itself into a Fruit, mellowing into Taste and Colour, is not usual in the Works of Nature, tho' we see it in this common Shrub.

Culture of this ROSE.

We shall have Occasion hereafter to speak of Roses whose Culture requires all the delicate Art of the Gardener; but this is not one of them. It is, in the single State, native of the *East*, and wild in Hedges in some Parts of *Europe*. It is therefore easily raised to Perfection in our Gardens; and will live in any Exposure, and any Soil.

It may be raised from Seed; but as the Shrub is very common, and the Suckers which it produces freely, take Root without farther Trouble, this is the familiar Way of propagation.

Let a Bed be dug up in the Seminary, in *October*, and the Suckers taken from the Red Rose Shrubs, planted in it at a Foot Distance.

The Suckers taken up for Planting, should be of the same Year's Production; for those always take Root more freely than such as have stood longer about the Mother Plant. After one Year's Growth in that Bed, they may be taken into the Garden. No Compost is needed for them, for common Garden Mould perfectly answers the Purpose; and all the Care they will require farther, is, every *October* to clear away the Suckers, and to cut out the dead Wood, and thin the luxuriant Branches; taking off such as gall and rub against one another.

2. GREAT ANNUAL HELIANTHUS.

July.

Pl. 45.
Fig. 2.

The Gardener who sees the Figure of the Sun-flower, will not need be told that is the Plant we mean, though under a Name perhaps before unknown to him. Many Genera have been named unartfully, but none more than this.

Where the Antients have left us Accounts, their Denominations have been usually retained; and what was known to be strictly improper, yet had its Excuse; but that is not here the Case.

The Sun-flower, so conspicuous in the End of Summer, is native only of *America*, therefore it was impossible the *Greeks* or *Romans* should have known it.

A Plant so specious could not be overlooked by those who visited that new World with the Eyes of Science: its Seeds were some of the first which *Europe* received from that Quarter; and those who raised them earliest, must have been astonished as well as charmed, to see the vast Stalk rise; and the enormous Flower expand its golden Petals.

Late as our Knowledge of the Plant has been, it was however earlier than the Perfection of the Science; and in Consequence, those who first gave it Names, refering at Random to the established Genera, fix'd upon such as the present improv'd State of Botany cannot adopt.

DODONÆUS, whose Imagination was struck with its stately Figure, calls it *Herba maxima*; and JOHN BAUHINE follows him.

C. BAUHINE calls it *Helenium Indicum maximum*, Great *Indian* Elecampane.

Our PARKINSON came nearer Truth when he named it *Chrysanthemum Peruvianum*, *Peruvian* Corn Marygold: and GERARD did yet better, in giving it a Name distinct from all, *Flos Solis*: this, though not an unexpressive is an unartful Term: and LINNÆUS has adopted its Sense, though from another Language, calling the Plant *Helianthus*. He adds as the Distinction of this Species, *foliis omnibus cordatis, nervis pone basin unitis, extrorsum denudatis*: Heart-leaved *Helianthus*, with the Nerves united behind the Base, and naked outwards.

This Author in his earlier Works call'd it only the *Annual Helianthus*; and VAN ROYEN gave it the same Name; but more Species have been added to the Genus, and a longer Denomination has thence grown necessary.

The Root is fibrous, and small in Proportion to the Plant: but the Fibres are numerous and spreading.

The Stalk is rounded, and variously ridg'd; thick, of a pale green, ten Foot high, not branching, and properly supporting but a single Flower: this gives the Plant its Lustre and full Glory; this is the regular Course of Nature; and this, when Chance disturbs it, the Gardener should favour, by taking off all Branches as they rise, and rubbing away the Buds of any secondary Flowers: this Way the Plant glows in its full Strength, and flowers in all its Vigour.

The Leaves are numerous: they stand irregularly on the Stalk, and they are broad, heart-

shaped, indented, pale, of a firm Substance, and rough to the Touch. They have long Foot-stalks.

The Flower is too heavy to be supported without drooping. It is the largest of all the Composite Kind; round, radiated, and, when fully nourished, a Foot and half in Diameter.

The Disk is of a deep yellow inclining to orange, and is composed of numerous, large, and close pressed Floscules: the Verge is made of golden Rays, pointed and disposed with an elegant Regularity. Only one Seed follows every Floscule, but these are so numerous, and the Flower so large, that RAY mentions two Thousand three Hundred and Sixty-two Seeds from one of them.

In the LINNÆAN System, the Student knows these Composite flowered Plants are arranged according to the Condition of the impregnating Parts in the separate Floscules; and as the Buttons coalesce, they are called *Syngenesia*. The particular Characters are very well worth tracing; and the Flower is here so large, that it makes that Task easy.

The general Cup is scaly and expanded, and is composed of oblong Parts, broad at the Base, pointed at the End, and spreading. Beside this, each Floscule has its distinct Cup: this is placed on the Rudiment of the Seed, and is composed of two little lanceolate and sharp-pointed Leaves.

The Floscules of the Disk are cylindrick, shorter than the general Cup; at the Base swelled, rounded, and depressed; and cut into five pointed Segments at the Rim. These have the male and female Parts both perfect. Five crooked Filaments are placed in the Base of the Floscule, and terminated by a Head of cylindrick hollowed Buttons.

The Rudiment of the Seed is placed between the general and particular Cup, and has a Style of the Height of the Floscule, with a Head split into two Parts, which turn back.

The Rays have only the female Part, and this, as it seems very imperfect, there is to each a Rudiment of a Seed placed beneath the proper Receptacle, which has neither Style nor Head, and therefore cannot ripen. The Seeds under the other Floscules come to Perfection.

We have acquainted the Student before, that the Subdivisions in this LINNÆAN Class, are founded on the various Impregnation; and he will recollect, on seeing that the Seeds under the female Floscules or Rays do not ripen, that the Section to which this belongs, is that of the *Polygamia Frustranea*.

Culture of this HELIANTHUS.

It is a Native of the warmer Parts of *America*, *Mexico* and *Peru*; yet will bear our Summers in the open Air, and flower in Perfection. It is an Annual; and to bring the Plants forward, there must be the Assistance of a Hot-Bed for the Seeds.

July.

We have before given the Manner of making the Hot-Bed for tender Annuals, and the full Method for their Culture. All that needs be observed particularly for this, is, that the Heat of the Bed be moderate, and the Seeds well covered.

They may this Way be sown in *February*, which will be a great Forwardness to the Plants, and will bring them to Flower at this Time, and consequently to ripen their Seeds perfectly and in full Vigour; whereas those who raise them in the open Ground, are obliged to defer the Sowing till much later, and consequently the Plants flower late, and the Seeds ripen poorly.

When the Seedlings are two or three Inches high, they must be planted out into another Hot-Bed, and after a few Weeks they may be removed into a warm Border in the open Ground. No Compost is required for them. The Plant thrives perfectly well in common Garden-Mould.

In the Beginning of *May* they will be fit for transplanting into the Places where they are to flower. They should be taken up with as much of the Mould as will hang about their Roots, and set in Borders among other large Plants; one

every twelve or fifteen Foot, with other Kinds between: 'tis thus they will attain their Perfection, and will shew themselves properly. When they are planted near, they starve one another; and they are too big to be seen agreeably, if not distinct.

When they are planted out this last Time, they must have the Mould well broken to receive them; and they must be largely watered till they have taken Root; after which they will require no more Care.

When they are in full Flower, let some of the finest be marked for Seed; and let it be carefully ripened and guarded from Birds, for securing the next Year's Growth.

The Number of Petals is uncertain in this Flower; and, like other Kinds, it will be made more double by good Culture. For this Purpose, the Flowers which have the most numerous Petals, must be marked for Seed; and after every Succession, the same Care and Conduct being observed, the Plants will from Year to Year flower in greater and greater Perfection.

July.

3. GREAT FLAKE CARNATION.

Pl. 45. We have acquainted the Student in a preceding Number, what is meant by the *Flake*, and what Fig. 3. by the *Bizarre* Carnation: these are Gardeners Terms, applied each in a general Manner to several Kinds of the Carnation, all the Offspring of one Stock, under the various Degrees of Culture and repeated Improvement.

The *Flake* Carnations are those which have only two Colours, in Stripes; and are thence distinguished from the *Bizarres*, which have more: this is one of the principal; a very delicate and noble Kind.

The Authors who have written on Flowers, have described it under the Names of *Caryophyllus albo purpureus*, and *Caryophyllus peramænus*: the purple and white, and the delicate Carnation.

Science refers it to the Clove Julyflower, from whose Seeds it originally has risen: and this LINNÆUS calls *Dianthus floribus solitariis, squamis calycinis, subovatis brevissimis, corollis crenatis*: Single-flowered *Dianthus*, with short oval Scales to the Cup, and indented Petals.

The Plant, in the Condition wherein we here describe it, has great Superiority over the common Appearance, as well as in the Flower.

The Root is composed of numerous long and slender Fibres.

The Stalk is very firm, upright, round, jointed, and two Foot high.

The Leaves are narrow, and stand two at a Joint; and the Flower is very large and very delicate.

The Colours are only two, a perfect White, and a deep glowing Crimson: they are disposed in Streaks, and that with a beautiful Regularity, and they go through the Body of the Petals: they are broad and waved, and finely set off one another.

The Petals are numerous, broad, indented at the Tops, and they spread freely in various Forms, but make the outer Edge or Circumference of the Flower round.

The Cup is double, as in the other Kinds, consisting of a few Scales, which make the outer Cup, and a long cylindrick Part, which is the inner, and which Florists call the Pod of the Flower.

The Culture of this Kind we shall give with that of the succeeding.

July.

July.

4. The GREAT BIZARRE CARNATION.

Pl. 45.
Fig. 4.

The Root, Stalk and Leaves of this are the same in Form and Size with those of the preceding: the Difference is in the Flower. This is large and extremely elegant: full of Petals; rising in the Middle, rounded at the Verge, and marked in the most elegant Manner with three Colours: these are a pearly white, a fine scarlet, and a deep purple. They are disposed irregularly in narrow and elegantly waved Stripes, and all go through the Petals.

The general Form and Parts of the Flower are the same as in the preceding, and both are to be referred to the common *Clove Julyflower* as their Origin. To that also in its simple State we are to send the Student, who would trace the Characters of the Carnation in its plain Form to know the Class of the Plant.

The outer Cup is formed of four Scales, placed alternately higher and lower; the inner Cup or Pod has five Indentings; and in the Flower which consists of five Petals, are placed ten Filaments, with compressed Buttons, of an oblong oval Form; with two Styles which rise from an oval Rudiment, and are longer than the Filaments, with crooked pointed Heads: this shews the Plant to be one of the *Decandria Digynia*.

The Culture of CARNATIONS.

We shall here lay down at large the Culture of this elegant and noble Flower. The Gardener who chuses to propagate it only by Layers, will find in the Course of our Rules the Method of doing that; but we shall propose to every curious Hand, the taking up the Culture from the Beginning; that he may obtain more and better Flowers.

This is the Season for setting about the Work; for the Plants are to be raised from Seeds, and it is now those Flowers should be marked from which they are to be saved.

Let such Flowers be reserved for Seed as have the Stalk thick, firm, and well knotted: let the Mould about these be well broke at the Surface before they open; and afterwards let them be watered often, though but little at a Time.

Let the Flowers be large; with lively Colours, and firm broad Petals, and with a true Shape or Roundness in the whole Out-line.

It will be proper to mark several of the strong Plants before their Flowers are seen; and out of these to select, when they are in Bloom, those whose Flowers have the Properties we have just described.

These being marked afresh, and ordered for Seed, as we have directed on former Occasions, by taking off all secondary Flowers, by watering the Plants while in Bloom, and while the Seeds are swelling; and omitting all Water, when they have attained their Growth, let the Compost for the Plants be prepared thus:

Mix a Load of rich dry Pasture Mould with
N^o 45.

half a Load of Pond Mud, and a Quarter of a Load of Cow Dung; add two Bushels of Wood-pile Earth, and one Bushel of sharp Sand, with the same Quantity of Soot.

Let these be very well blended together, and lie open to the Air. They are to be often turned, and thus will be fit for Use by that Time they are wanted.

When the Seeds are ripened in the Pods, they must be cut off, and spread at a Distance upon a Shelf in an airy Room.

When they have lain thus a Fortnight or three Weeks till perfectly hardened, they must be put up in several Paper Bags; not too many together, and hung up on Lines in the Seed Room all Winter.

At the End of *March* chuse a Part of the Seminary which is open to the South East, but sheltered from the Noon Sun, and from all cold Winds. Mark out a Bed three Foot broad, and as long as needful for the Quantity. Dig up the Mould a Spade Depth, and break it well. Cover it with three Inches of the Compost: lay the Surface then perfectly level, and scatter on the Seeds with an even Hand. Sift over them a third of an Inch of the same Compost, and thus leave them.

The raising of these is not so tedious a Business as that of bulbous Plants. They will appear in about thirty Days from the Sowing; and if the Mould grow dry, they must at Times be watered. Thin them where they rise too close; and in this Bed let them remain till Midsummer, weeding and watering them as Occasion requires.

About the Time we have named, the last Week in *June*, or sooner if the Plants by their Size are ready for Removal; make a larger Bed in the same Manner, covering it with five Inches Thickness of the Compost. Level the Surface, and draw Lines each Way at four Inches Distance; and in the Centre of every Square thus formed, plant one of the Seedlings. Give them a gentle Watering as soon as they are in the Ground; repeat this every Evening till they are rooted, and shade them with a Reed Hedge.

Six Weeks they are to remain in this Bed: and then let him prepare another.

This must be four Foot wide, and covered six Inches with the same Compost: in this Bed the Plants must stand in three Rows, at nine Inches Plant from Plant; and be again well watered and shaded till they are firmly rooted.

In this Bed they must stand to flower, observing to weed and water them frequently.

The first Years flowering will give a very reasonable Promise of what is to be expected, but there is no judging of a Flower perfectly till after the second.

The best Plants should have all their Shoots laid in this Bed.

All the inferior Kind should be taken up and
6 U
planted

July. planted out into other Parts of the Garden : and the Layers of the others must be taken off when they are well rooted, and planted in Pots; or in conspicuous Parts of Borders, according to their Value, and the Pleasure of the Owner.

The Method of Laying we have given in a preceding Number : the Shoots are to be carefully secured in three Places by Pegs, or forked Sticks, and well covered, and well watered till they have taken root.

If the Flower Stem be cut down as soon as these are laid, and the Plant not suffered to blow that Year, the Layers will be the stronger. At the utmost, the Flower if suffered to open, should be taken off as soon as it has shewn its Beauty; for he who should save Seeds from a laid Plant, will spoil the Layers.

When the Layers are well rooted the finest must be taken off, and planted each in a separate Pot in the same Compost. These must be set in a shady Place, and watered till they are well rooted.

In the Beginning of *October* let a Piece of Ground be dug up in a dry Part of the Seminary, with a good Quantity of Sand among it; and in this let the Plants be set, burying the Pots up to the Rim. A Parcel of Hoops must be placed over this; and there must be a Covering of Canvass ready to draw over them in bad Weather.

The Layers being thus preserved through Winter, should be planted out into larger Pots of the same Compost for flowering in Spring. The Season must determine this; but, in general, the Beginning of *March* is a good Time.

When they are planted in these larger Pots, they must be set in a shady Place, and watered every Evening till well rooted.

Six Weeks the Pots should stand there, and at the End of that Time they should be removed to the Place where they are to flower;

July. this must be open to the Morning Sun, but defended against the full Noon Beams, and against cold Winds.

The Choice of this Place is a very essential Article for the well flowering of the Plants. Tho' defended from sharp Winds, it must not be smothered by too much Shelter; for unless the Air come freely among the Plants, the Flowers will never be fine.

The Stalks will soon rise for Flower. Two may be suffered from one Root, but a single one is better. There must be a Stick planted in the Pots for tying them up as they rise, and all Side-shoots must be taken off as they appear.

When the Buds appear for flowering, the inner Cup must be opened in three or four Places, to favour the regular spreading of the Petals; and it must be defended from Wet, and too much Sun, by a Glass Cap; covered occasionally with a Piece of Bays.

After this a Paper or Card Collar may be placed under the Petals; and the Gardener must from Day to Day, as they disclose themselves, favour their spreading, that they may be supported every where by the Collar, while they hide it completely; and he is afterwards to lay the several Petals handsomely one upon another; they will remain as they are placed, and make a very regular Appearance.

While they are in Flower, they must be carefully watched to prevent Destruction from Insects; and watered moderately, and often, with Water from a shallow Pond that lies exposed to the Sun.

Thus they will be brought to flower perfectly, and continued in their Beauty as long as Nature will permit: and by saving Seeds from the finest Kinds that ripen them well from Time to Time, the Stock will be increased and improved every Season.

5. DOUBLE VIOLET POPPY.

Pl 45.
Fig. 5.

This is a specious Plant of easy Culture: an Animal which bears the open Ground, and lives with no more Care than Weeds in the Garden; varying in a Thousand Forms in the Flower, but in all elegant; and often very bright and glorious in the Colouring.

The Generality of Authors who have written on Flowers have named it; and in the various States in which the Chance of Growth has shewn the Flower, have too often given it distinct Denominations. It has been called *papaver bortense flore purpureo*, and *flore pleno violaceo*, and simply *papaver flore pleno*.

LINNAEUS rejecting the Distinctions of Doubleness and Colouring in specifick Names, calls it, *Papaver calycibus capsulisque glabris foliis amplexicaulis incis: smooth cupped and smooth headed Poppy, with Leaves surrounding the Stalk, and cut at the Edges.*

This is the proper Name of the Garden Poppy in its plain and simple State; and to this he refers all the painted, double, and otherwise distinguished Flowers. RAY did the same before him. He describes the Plant under the Name of *Papaver faticum*, and refers all the Varieties to one common Stock. We know the Seeds of one Kind produce them; and this is the great Article for judging of these Distinctions.

The Root is long, white, and hung with a few slight Fibres.

The Leaves are long and large: they rise without Footstalks, and their Colour is a pale blueish or greyish green.

The Stalk is of the same pale pearly green, and four Foot high; smooth, round, and toward the Top branched.

The Leaves on this are placed irregularly, and resemble those from the Root: they surround the

Stalk

July. Stalk in part at the Base, and they are long, broad, and jagged at the Edges.

The Flowers stand at the Tops of the main Stalk and Branches, and they are very large and specious. They naturally consist of four large Petals: in the Middle of which, as in the Anemones, rise Multitudes of smaller clustered together in various Manners, and in different Numbers, according to the Degree of Culture and Accidents of Growth.

The Colour is a deep violet purple, very full, rich and elegant. The Bases of the large outer Petals are deepest, and the Colour spreads itself in a paler Tinct throughout.

The smaller inner Petals are of a paler Hue, and often variegated with red and white, with Streaks or Blotches of a purple, so deep that it is nearly black. In this, Culture makes vast Variation; but to the Botanical Student we are to observe, that the Characters of the Class must be sought in the single, plain, and simple Flower.

He will find this at first supported by a slight, though large Cup, formed of two oval Leaves,

hollow, obtuse, and of short Duration.

The four Petals which in this simple State compose the Flower, are broad, large, and expanded; and two are smaller than the others, and placed alternately.

In the Centre stand numerous, short, and slender Filaments; crowned with oblong, obtuse, compressed, and upright Buttons. These surround a large, roundish Rudiment of a Fruit; on which, without any intermediate Style, rests a flat radiated Head like a Shield.

The Filaments he will find inserted on the Receptacle; and this with their Number shews the Plant one of the *Polyandria*, the single Style one of the *Monogynia*.

The Rudiment ripens into a large round Seed-vessel, covered with the Head, and opening by many Apertures under it. In this are numerous Seeds in a single Cavity, but separated in part by many Ridges from the Sides of the Head.

The Culture of this being the same with that of the succeeding Kind, we shall give them together.

July.

6. FEATHERED POPPY.

Pl. 45.
Fig. 6.

We have told the Student that the various Garden Poppies of this large Species, are all the Offspring of one common Kind: this, which Authors have called *Papaver flore pleno laciniato*: the double jagged flowered Poppy; some *Papaver dissectum*: the ragged Poppy; and our Gardeners not improperly, the Feathered Poppy, rises together with the preceding, from the Seed of the common great Garden Kind, to which we have referred that, and differs in little more than the Structure of the Flower.

The Root is large, long, white, and hung with Fibres.

The Stalk is a Yard or more in Height, and the Leaves are of a greyish or blueish green; oblong, and cut at the Edges.

The Flowers are large, and consummately beautiful. They are composed of numerous long Petals, which are cut and jagged deeply into many Parts at the Edges, and have somewhat of a feathered Aspect.

Their Colour is naturally a very elegant and bright scarlet, but they are varied in this Respect without Limitation: they are sometimes blotched, and often elegantly streaked with purple and with white.

The Bases of these Petals are naturally white, as those of the other are blackish; and there is usually more or less of the white mixed with great Elegance in the whole Flower.

The whole Plant in this, and in the other Kind, as in the common white Poppy, abounds with a bitter Juice of an opiate Smell.

Culture of these POPPIES.

The Plant is a Native of the southern Parts of Europe; and flowers wild, but with no great Beauty in waste Grounds, in many Parts of England, where scattered Seeds from Gardens have accidentally fallen.

From this Plant, which in its common State has a single Flower with pale Petals, whose Bases are dark or blackish; Culture has raised the innumerable Varieties with which our Gardens abound, and of which these are the two principal.

Let the Gardener observe that we speak here only of the tall large Garden Poppies; for those small Kinds which are called Dwarf Poppies, are the Offspring of the common wild red Poppy of our Corn Fields, treated in the same Manner.

All the Varieties of which we have spoken here, are to be obtained from Seeds; and there will rise from every Sowing, when properly managed, many others: the Colouring will vary without Bounds; and after repeated Sowing of good Seeds, there will be many Flowers obtained scarce inferior to Carnations. The Method to be observed is this:

When the Plants are in Flower, let the finest of them be marked for Seed; and upon these let only three Heads ripen on one Plant. Let them stand upon the Plant till they are very well hardened, and then be taken off and laid on a paper'd Shelf.

When they have lain there three Weeks, at a Distance

July. Distance from one another, and turned every Day, let them be cut open; and the Seed scattered loose upon the Shelf. When it has lain thus ten Days, it will be fit for sowing.

Let a Bed of rich and fine Garden Mould be well dug and levelled at the latter End of September; and upon this sprinkle the Seeds tolerably thick; sift over them a Quarter of an Inch of Mould; and leave them to Nature.

When the Plants have a little Strength, thin them to four Inches Distance, leaving the stoutest; water these at Times, and keep them carefully weeded; and when they are so large as to touch one another thin them again. Leave only as many of the strongest Plants as will stand at eight Inches Distance, and from this Time weed and water them carefully.

When they are near flowering, let the Gardener keep a watchful Eye upon them; and as soon as he perceives any ordinary Flower, let it be pulled up. There will be found among the others a

Variety of beautiful Kinds; and the Seeds of the best of these which ripen them well, must be saved for the next sowing.

This must be done every Year; and the Bed of them must be every Time upon a new Piece of Ground: thus the Plants will improve every Year in Elegance; and if a sufficient Quantity be raised, there will be often new Varieties produced.

Let the Gardener understand this Change of Place rightly: it is the essential Article in the raising Annuals in the common Ground. The Principle in Nature on which it is founded is not known; but the Fact is sufficiently established, in this and a Thousand other Instances.

The Farmer finds great Advantage in obtaining the Seed Wheat for his Crop from a distant Place; and it is equally true, that the Seeds of annual Flowers succeed much better upon new Ground, than on that in which the Plants grew which produced them.

7. The DOUBLE MUSK ROSE.

Pl. 45. We have said that in a succeeding Number
Fig. 7. we shall deliver the Culture of the most elegant and choice Kinds of Roses; but there remain some others more easily raised; which, for their Singularity, or Elegance, demand a Place.

The *Musk Rose* is one: its Flower is inferior to many other Kinds in Size, and in Colour is simply white, but the Scent makes Amends for its other Defects, and the Number of the Flowers is some farther Recommendation.

The Generality of Authors who have written on Flowers have named it. The *BAUHINES* call it *Rosa moschata flore pleno*, and *Rosa moschata minor flore pleno*. The early Writers only *Rosa moscata alba*.

LINNÆUS, who refers the Varieties boldly in this Genus to their proper Species, calls it *Rosa caule aculeato pedunculis levibus, calycibus semispinnatis glabris*: prickly Rose with smooth Flower-stalks, and smooth semipinnated Cups.

The Root spreads, and is very hardy.

The Stem is firm, but not thick, and the Shoots are numerous: it makes a Bush of three Foot or more in Height: prickly in all Parts except the Foot-stalks of the Flower.

The Leaves are large, they are pinnated, and of a pale green: each is composed of about two Pair of Pinnæ, with an odd one at the End; and these are ferrated at the Edges.

The Flowers are very numerous, and perfectly white. They have the musky Scent, but much less than the common single white Musk Rose, and they are not of the larger Kinds; their Petals are numerous, but usually folded irregularly together.

There is a great deal of Difference in the Aspect and Scent of this Rose, according to the Degree and Manner of Culture: when the Flower is most regularly expanded it smells most sweet.

The Characters when traced in the single Flower, are the same as in the first Kind described in this Number; and it is to be cultivated in the same general Manner. It requires a better Soil, and more Compass; and must never be suffered to run too high, or to be loaded with too much Wood.

The richest Garden Mould is the proper Earth for it; the Bush should be planted at a Yard Distance every Way from any thing else, and the exuberant Shoots kept under.

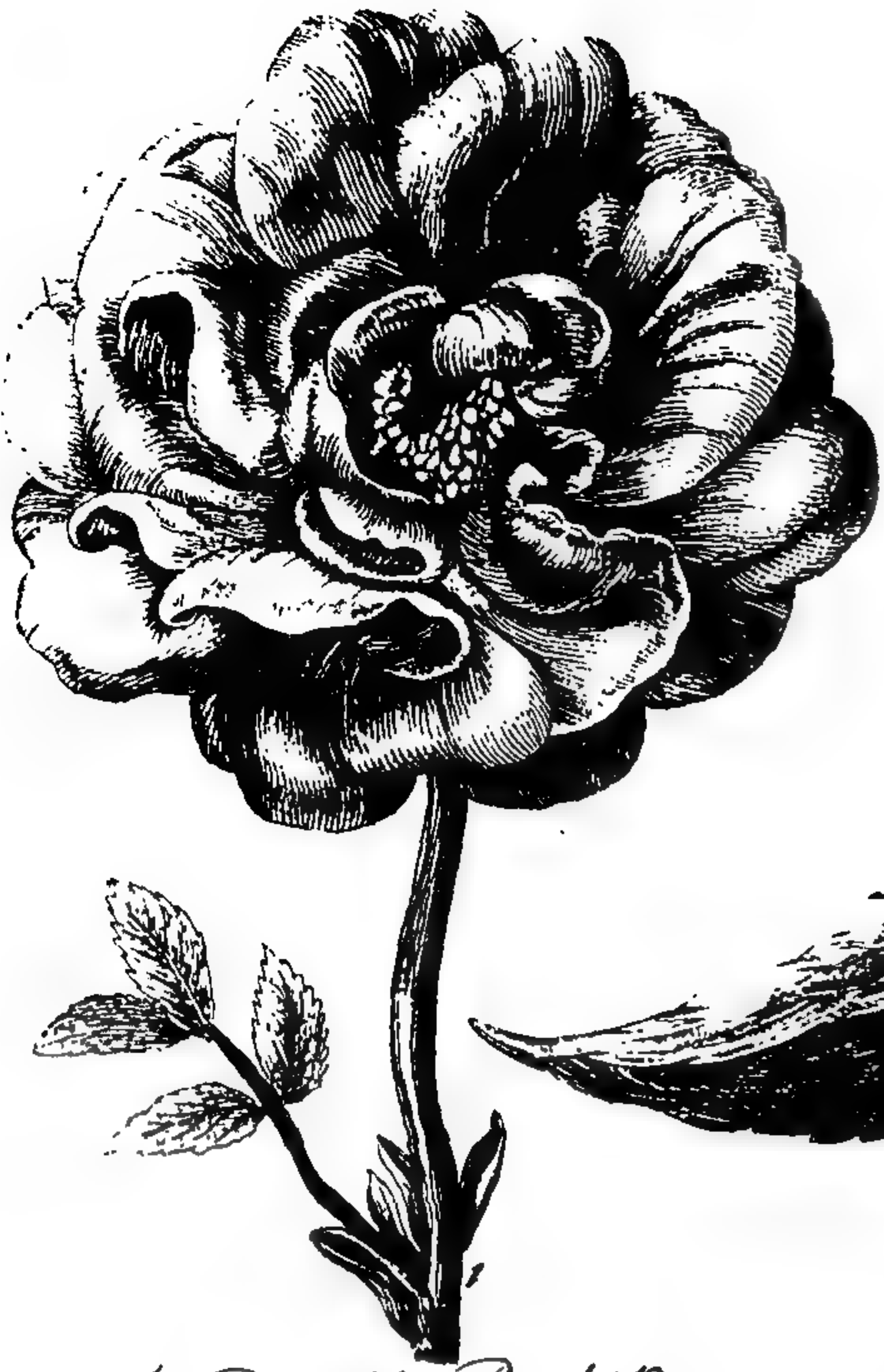
Every *October* it should be pruned with a bold Hand; and every Spring a great Part of the Mould should be taken off, and fresh put in its Place all round it. Then in the Beginning of the flowering Season it must be well watered, and too many Flowers must not be suffered to blow, nor any to stand after they have passed their Beauty.

8. The HUNDRED-LEAVED ROSE.

Pl. 45. This is a very elegant and noble Rose, vastly
Fig. 8. beautiful, doubled, and fragrant. All the Wri-

ters on Flowers have named it, and all with Praise.

CLUSIUS,



The Double Red Rose



Great Annual Helianthus



Great Flake Carnation



Great Bizarre Carnation



Double Violet Poppy



Feather'd Poppy



The double Musk Rose



The hundred leaved Rose

July.

CLUSIUS, from the Number of Petals in the Flower, and the Country whence it was received; named it, *Rosa centifolia batavica*: the Hundred-leaved Dutch Rose; a Name most others have followed. — C. BAUHINE calls it, *Rosa multiplex media*: the middle double Rose.

LINNÆUS, who has sought more essential Marks of Species, calls this *Rosa caule aculeato pedunculis hispida, calycibus semipinnatis glabris*: the prickly Rose with hairy Footstalks to the Flowers, and smooth semipinnated Cups.

The Shrub is moderately large: the Wood firm, and the Branches long and prickly.

The Leaves are pinnated, composed of one or two Pairs of large fair Pinnæ, which are of a fresh green, and serrated at the Edges.

The Flowers are very large and beautiful: they are rounded, composed of almost innumerable Petals; elegantly, though wildly thrown and folded together; and they are of a delicate Red.

The Characters of this Kind are the same as in the common Rose, but they must be sought in a single Flower: we have given them in the Account of the first Rose in this Number.

July.

CHAP. II.

The Care and Management of the Ground.

THE great Care of Weeding and Watering, Rolling and Mowing, must be continued with an uninterrupted Hand. This is the Season of enjoying the Pleasures of a Garden, and every Thing should contribute to that Satisfaction.

The Labour of bringing Flowers to Perfection has been very great, and it would be highly unfit that there should want a little Neatness now to set them off.

This done, let the Gardener look to the Layers he has lately made of Sweet-williams, and Pinks, and particularly of Carnations. They will all require Care; but the best the most.

Let him water these once in two Days, gently, but thoroughly; and every Time see that their Sticks keep them securely in their Places.

If the Mould be removed by the Watering, let him put fresh in the Place, that they remain equally and well covered; and if any of them do not take kindly, let him shade them from the Sun.

This Care taken of those already laid, he may go on with the Business of Laying others, where required. 'Tis best to do this sooner; but where it has been omitted through Neglect, or where the Shoots intended to be laid have not been ready, it may very well be done now: only as it is a more advanced Season, there must be more Attention paid to every Part of the Operation; and particularly to the well covering the Layer, and the Waterings.

Though every other Evening may be enough for the Layers which have been in the Ground some Time, those which are put into the Mould now, will require it every Evening; and they will not root freely, if the Season be very warm, without good Shade.

We advised the sowing several of the Biennials late in the Spring; these will now require transplanting. There must be a Bed of fresh Earth dug for them, and they must be taken up out

N^o 45.

of the Seed-beds in a cloudy Evening, and planted in this new Ground at four Inches Distance, and those of large Growth at greater: they will require to be well and frequently watered till they have taken root; and after that they must be weeded from Time to Time during the Remainder of the Summer.

In Autumn they must be removed into the Places where they are to flower.

Once in two Days let the Gardener gather the Seeds of such Plants as have been left for that Purpose, and ripen many Heads: he must from Time to Time cut off those which are most ripe.

The Middle of the Day is the best Time for this, because the drier they are when laid upon the Shelf, the better they will harden.

On the contrary, all transplanting at this Time of the Year, must be done in an Evening about Sun-set; and the Waterings will take most Effect if given an Hour or two before that Time. These Cautions are proper throughout the Year, but they are indispensable now.

Let the careful Gardener look over all those Summer Plants which produce a great many Flowers. The Purpose is to continue these in Succession, and it must be done by preventing the ripening of Seeds.

Where these are intended, the Plants are to be marked for that Purpose; and after some good Flowers are blown, the Buds of others are to be taken off, that the Force of Nature may be directed to the ripening of Seeds in those: This is an essential and important Point, though not enough regarded.

The Seeds of those Flowers which blow first are always strongest; and when too many are suffered to ripen upon one Plant, all will be indifferent. Therefore in the setting for Seeds, all those Plants which have many Flowers, the six or eight first blowing should be marked.

If any of these are not perfectly fine, such
6 X must

July. must be taken off; and only as many more suffered to open as will supply their Places: all others must be taken off as they offer themselves in the Bud; and thus the Perfection of the Seeds, in those reserved for that Purpose, will be attained.

While this Care is taken of those Plants left for Seed, let the Flowers of the others be managed for Beauty, and a long Succession upon the Principles we have laid down on other Heads; for in Gardening the same End will always be attain'd by the same Means, whether the Subject be Plant, Shrub, or Tree; whether the Object of Attention be Flowers, or Fruit.

In these Plants too many Flowers must never be suffered to blow at a Time, nor any to stand longer than they are in full Beauty. Therefore when there are too many at a Time upon the Stem, some must be taken off. At all other Times no Flower whatsoever must be permitted to remain longer than while in the full Glory of its Bloom; for when they begin to fade they also begin to set for Seed.

In regard to the others, as there are usually more Efforts toward flowering than a Plant can support, to bring all to Perfection, therefore some should be taken off while in the Bud; and those left on should be so selected, as to form a kind of Head regularly terminating, or covering the Plant.

The Gardener need not fear from this that he will have but a small Bloom; on the contrary, it is the true Method, and indeed the only one to procure a long and fine Succession of Flowers.

The cutting off those Flowers which begin to fade will give the Plant a Tendency to send out more Side Branches; and this will be more promoted by the Method here directed, of not

July. suffering too many Flowers to open upon it at a Time: the frequent Waterings which we direct also to be given to Plants in that Condition, will greatly favour it; and by this very Means, supposed at first Sight likely to decrease the Number of the Flowers, they will be produced in twice or three Times the Quantity; and will continue in Beauty a long Time, instead of appearing in one great Cluster, and exhausting the Root.

The Beauty of a Flower Garden depends more than many People are aware, upon these nice Points in the Management of the Plants: few have consider'd the Nature of Vegetation, and except those under our own Eye, few have practised them in the punctual Manner here directed: this is the Season, and we have therefore given the whole Method.

Let the Gardener keep a watchful Eye upon those Cuttings of Exotick Plants, which we directed him to make some little Time ago. They will require watering and shading; but both in Moderation: the Watering must not be so great as to keep the Ground like Pap, nor must the shading of those Kinds which we order'd to have Hoops and Mats put over them, exclude the Air at proper Times.

The Use of Canvas and Matting is against the Noon-day Sun; and in those Cases where the Coldness of Nights is kept off by it, still there require frequent Admissions of the Air.

Cuttings will live under more Closeness than Plants which are in an active State of Vegetation; but still they require some Air: this must be admitted as such Times as will least interfere with the general Purpose, and least chill the Bed.

S E C T. II.

The Care of the SEMINARY, for this Week.

THIS Week the Gardener is to continue his Care of those Stocks he has budded the preceding Weeks; loosening the Bandages of such as have been done eighteen or twenty Days, that the Juices may not be stop'd in their due Course: and he is to continue the Work; budding Cherries, Plums and Pears. The Evening of a cloudy Day, when the Air is cool and moist, is the proper Time.

Our Caution of being expeditious in the Work must be observed, the more as the Weather is hotter, and less favourable.

The Operation of budding is the most delicate of all that are practised on Trees, and the great Art is to commit the Bud to the Stock in

as natural a State as possible. The Air never fails to injure it; and this the more, as it is the hotter: these are the Reasons why a cool, moist Kind should be chosen; and an expeditious, tho' careful Hand employ'd.

The Layers of the several Trees and Shrubs which was put into the Ground last Month, will require to be very well attended.

The Business is to get them to root before Winter; and this must be assisted by the keeping them securely in their Places, and by repeating the Waterings: as the Water washes off any of the Mould, more must be supply'd in its Place; but a great deal of Care must be taken not to disturb that which lies about the Branch; for the young

July. young Fibres that will in some Places be beginning to shoot, would be hurt at this Season by the least Motion.

Continue the Care of weeding and watering the young Exotic Trees, particularly those of the resinous Kinds, which were planted out of their Seed-Beds the Month before. These will require a due Care, but with that there is no Hazard. They must be shaded at Noon, and watered lightly once in two Days; and the Mould must frequently be broke between them, to prevent Weeds, and to make it fit for absorbing the Dews.

This and the succeeding Week, let the Gardener transplant Evergreens; and it will be proper that he allow them more Care in this Respect than is usually done. These Trees seldom fail to thrive when transplanted at this Season, tho' of considerable Size, if there be due Attention shewn them, but without that they receive a Check very difficult to be recovered.

The Method is to open a large Hole for each, and break the Earth perfectly at the Bottom; then to bring in the Tree, taken up with a large

Ball of Earth to its Root, and setting it upright, July. to trim all the extreme Fibres. Immediately after this, let some Water be poured upon the Ball of Earth, which was brought in with the Root, carefully from a Watering-Pot, and some of the finest Mould sprinkled over the Ball. This gives the new cut Ends of the Fibres a fine fresh Covering; and before it dries on, or moulders away, the rest must be brought over it, by filling up the Place.

The Mould must be thrown in with a swift but careful Hand; and when it is all in, and well closed about the Roots, there must be a large Watering: but this, though large in Quantity, must be given with Moderation; for the Intent is, that it work itself slowly down between and among the Roots; and this is never well executed unless the Gardener allow Leisure, and give the intended Quantity of Water at four or five Times, with moderate Intervals.

This must be repeated every other Evening; by Degrees lessening the Quantity: and thus there will be no Fear of Success.



S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

THE choicest Fruits are now ripening, and the Gardener's best Care must be employed to promote that essential Purpose. He understands the Principles of his Art by this Time well enough to know how this is to be done.

We have directed that no Plantation whatsoever be made upon the Borders in which Fruit-Trees are planted; and if no useful Herbage be allowed, he will very well know that there must be no Weeds.

Let him break up the Surface of the Mould with the three-prong'd Fork: but it must now be done but very lightly and superficially. As soon as this is done, let him allow a gentle Watering, and let this be given at a Distance from the Stem.

The Business now is to swell the Fruit: too much Water would at the same Time impoverish it, and debase the Flavour: a little only supplies the want of Rains, which are unfrequent at this Season; and, as I have found by repeated Experience, and fair Comparison, it will have all the Advantage of swelling the Fruit, and at the same Time will improve its Flavour.

What I have found by Tryal, and by the Comparison of Fruit from watered and unwatered Trees at this Season, I may safely proceed to explain.

The Flavour of Fruits, though determined by the Vessels of the Tree, yet is originally elaborated from the Particles which the Root receives from

the Earth: these require to be moistened, in order to their penetrating the Fibres, or being receiv'd by them; and when this is not done, when Nature refuses Showers, and the Gardener neglects Watering, the Fruit is more imperfect than when Showers have been too abundant.

In all the Operations of Nature there is understood and required a certain Degree of Moderation, beyond or beneath which is equally hurtful. This Nature means always, but cannot without repeated Miracles constantly accomplish. The Art of the Gardener is to supply the Defects: to supply them it is necessary that he first see them; and then that he make this Moderation his Rule of proceeding.

If he will watch and keep Journals of his Fruit-Trees for several succeeding Years, he will find that in very wet Summers the Fruits are always swelled and ill-flavoured; that in very dry Times they want both their natural Size and Relish; and that it is only in those Summers which are refreshed by moderate Rains, that they are perfect. He will by this learn easily a proper Conduct.

In very wet Summers it will be in his Power to serve the Fruit-Trees greatly, by drawing a Mat from the Top of the Wall to the Ground, at some Distance, and thus defending them against the worst Showers: and this will be easy, for the Summer is a Season when his Mats and Canvas are out of Use. In dry Summers he will be able to do much more by this: He may allow Water to
the

July. the due Degree, and at the necessary Time only.

He may give it to those Trees whose Fruit is taking its Growth, and either refrain entirely, or

give it with a very moderate Hand to those which have full-grown Fruit, and are ripening it. Thus he may always keep the Trees in order; and preserve and perfect all the Fruit left upon them:

July.



S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

THIS Week let a Piece of Ground be dug up; and some Colewort-Seed sown upon it with Care, for the Use of the succeeding Spring. These Crops which are to be sown so long before the Time of using, are apt to be neglected more than any others; but the Gardener is sure to be sorry for such Neglect.

There is very little Trouble in putting them into the Ground in Time; and they want only Weeding and Watering afterwards till the Season of Transplanting; after which they will stand the Winter without Danger, and come in for Use at a Season when there is little else.

Another Piece should be dug up for the transplanting of Broccoli; and after this the whole Ground being weeded, and the young Crops watered as they require, all will be put into good Order.

The Care of Melons at this Time is a very nice and delicate Article.

The Gardener has been so often told how wrong it is to give them too much Water now the Fruit is taking its last Growth, that he allows them none; but this is a Practice as false as the other. We have ordered him to lay a Piece of Tile under the several Fruits, to prevent the Damps of the Ground from chilling and rotting them; and this will have the farther good Effect of reflecting the Sun-beams upon them to ripen them; but 'tis the same in these as in the Fruit on Trees, too much Sun and no Water will spoil them. The same Caution is to be observed; and Moderation is the Rule.

Once in three Days it will be proper to give the Plants a moderate Watering; and this should be done with great Care, not to wet the Branches or the Fruit: only to give Moisture to the Mould in which the extreme Roots run.

Upon this Subject of Melons, we have been

favoured with an easy and excellent Method of raising them in Places where there are Stoves, and shall give it in the Words of our ingenious Correspondent.

S I R,

“ The Gardener who has the Advantage of a Pine-Stove, may raise Melons on it with little Trouble. The general Method of building them now is with a Flue, which runs round both the Ends and the Front. Upon these Flues I have raised some very early and finely flavoured Melons, in this Manner:

“ I make Boxes four Foot long, two Foot broad, and ten Inches deep: these I fill with the richest and finest Mould, and place them on the Flues, supporting them at the Height of two Inches from the Top of the Flue, by half a Dozen Pieces of Brick-bar. This is necessary on two Occasions: it prevents the Earth from drying too fast, and the Box of Earth from hindering the rising of the Heat for the warming of the Air in the Stove.

“ The Time of sowing these, and the general Management, are the same with those of Melon-Plants raised in the common Way; and it is best to raise only one strong Plant in each Box; or two if less vigorous.

“ This, which I have done successfully, I shall be glad if you will publish for the Use of my Brother Gardeners who have the same Conve-
niences:” I am,

S I R,

Your most humble Servant,

T. BARNES.

E D E N:

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER XLVI.

For the first Week in *AUGUST*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. GREAT WHITE ASPHODEL.

August.
Pl. 46.
Fig. 1.

THE yellow *Asphodel* we have described in a preceding Number, a specious Summer Plant; nor is this, though of a simpler Colour, less elegant. The Gardener has been long acquainted with it; and it is very worthy always to retain its Place in our Collections.

The earlier Writers who have described it, call it *Asphodelus albus*; and distinguishing the Plant from an accidental Variation in the Growth into two Kinds, they call it *Asphodelus ramosus albus*, and *Asphodelus non ramosus albus*: the white branched, and white *Asphodel* with a simple Stem. They also add the Term *major*, from its considerable Size.

LINNÆUS rejecting these slight Differences from the Construction of specific Distinctions, refers the Plant in both States to one Kind, and he names it *Asphodelus caule nudo foliis ensiformibus carinatis levibus*: naked stalked *Asphodel*, with smooth, hollowed, sword-like Leaves.

The Root is composed of many tuberous, roundish, or oblong Parts; of an acrid unpleasant Taste, and hung with many Fibres.

The Leaves are long and narrow, sharp pointed, hollowed, and of a tough spongy Substance.

The Stalk is round, smooth, naked, and two Foot and a half high.

Numb. XLVI.

From the Middle upwards, it is covered with a Spike of large and elegant Flowers. In the most perfect State of the Plant this single Spike terminates the Stalk; but sometimes it is divided into a kind of Head by the Partition of the Stalk into a Number of Branches. In either case the Flowers are the same as well as the Stalk, Leaves, and Root; wherefore they trifled who from this made out a separate Plant.

The Flowers are of a pure milky white on the Inside, but on the outer Part each Segment has a Rib of pale purple.

The Student recollects what we have shewn of the green Rib along each Petal of the Flower of the *common Star of Bethlehem*; this purple one upon the Segment of the present Plant is perfectly of the same Kind.

The Flower has no Cup: it is composed of a single Petal divided deeply into six Segments; and these are oblong, lanceolate, and expanded.

At the Base of the Petal is a Nectarium composed of six small Valves, which converge into a globular Form. From these Valves rise the Filaments, six in Number, and crowned with oblong incumbent Buttons, which rise upwards.

The Filaments are arched, and are alternately longer and shorter.

The Rudiment of the Seed-vessel is placed within the Nectarium. It is roundish, and

6 Y

sends

August ?

August. sends up a slender Style with a blunt Head.

The Seed-vessel is rounded and fleshy, divided into three Parts; and contains in three Cells, numerous triangular Seeds, which swell out on one Side.

The Student will see that the six Filaments and single Style refer it to the *Hexandria Monogynia*, the sixth Class in the LINNÆAN System, and its first Section.

Culture of this ASPHODEL.

We find the Plant wild in the southern Parts of *Europe*, and it is frequent also in the *Greek Islands*. There the oldest Authors, whose Works remain to us, found it, and thence they first removed it into Gardens: partly for the Beauty of the Flower, partly for the Root, which they held esculent. This HESIOD mentions, and after him THEOPHRASTUS.

It appears singular to us at this Time, that so ill tasted a Root should be kept for such a Purpose; but we find they roasted it: and after thus evaporating the most disagreeable Juices, mixed it with Figs; their Sweetness, and its Acrimony, mutually tempering one another. This we learn from the express Words of THEOPHRASTUS.

Some have translated what has been said by the *Greeks* of its esculent Quality, and applied it to the Squill. Then it appears doubly absurd.

Others have supposed the common *Star of Bethlehem* to be the *Asphodel* of HESIOD, and have thence called it the *Hyacinthine Asphodel*: they may quote GALEN who are against the Opinion of this Plant being the *Asphodel* of HESIOD; but to refer to THEOPHRASTUS is to call in a higher Authority. He lived much nearer the Time of

HESIOD, and may naturally be supposed to have understood what he meant: this Plant which is common to *Italy*, *Spain*, and *Greece*, is evidently his *Asphodel*. It is very easily propagated, and with due Care not difficultly improved.

The Roots increase abundantly, and the common Method of raising it is by parting of them in Autumn: but it grows freely from Seed, and this is the Way to obtain it in Perfection, and to improve it.

The Seed should be sowed with Care, gathering it when ripe, and drying it on a papered Shelf. Then mix equal Parts of rich Garden Mould, and common Pasture Earth. Dig out a Piece of Ground in the Seminary enough for the Seeds, and fill the Place with this Compost; and in the End of *August* sow the Seeds.

When the Plants come up let them be thin'd, and in this Bed let them stand a Year; weeding and watering them as necessary.

The *September* following dig out a Piece of a Border on the Garden, chusing a dry Place, and fill it with the same Compost. In this plant the Roots eighteen Inches asunder, and they will flower the next Summer. All they will require after this is, to be taken up every Year at the latter End of *August*, and to have a fresh Compost of the same Kind thrown into the Place. They must at these Times be reduced in the Root when they grow too large, and these Partings will grow freely.

The Flowers will have no Variation except in Bigness, and in the Degree of Colour of the Streak behind: but if the Seeds of the best Plants be sowed and sowed from time to time, the whole will become much more stately, the Flower larger, and the Ribs behind of a stronger and finer Colour.

2. P R Æ N E S T I N E R O S E.

Pl. 46.
Fig. 2.

We have observed that there would come under our Consideration some elegant Kinds of *Roses*: this is one; and as it requires some Care in the Culture to preserve its Beauty, will stand as an Example of the more delicate Kinds.

The Authors who of late Time have treated of Plants have named it, and all with great Praise: it is indeed one of the most singular and elegant of the known Kinds. They call it *Rosa prænestina duplex*, and *Rosa prænestina variegata*; and our Gardeners from the Mixture of the Red and White in it, the *York* and *Lancaster Rose*.

LINNÆUS, who rejects all these Names as inexpressive of characteristick Distinctions, refers the Shrub to the *Rosa campestris spinosissima flore albo odorato*, of C. BAUHINE: which in his more expressive Manner, he calls *Rosa caule petiolisque aculeatis calycis foliolis indivisis*: the thorny Rose with prickly Footstalks, and the Leaves of the Cup undivided.

This is a very correct and accurate Name for

the Species in its wild State; but Culture, while it improves the Flower, wantons also in other Parts of the Shrub; and in this, as in other of the *Rose* Kinds, obliterates often the Marks of the Species.

The Shrub is of moderate Height, and spreads into numerous Branches: when well managed it will make a very handsome Bush of four or five Foot high.

The main Stem is prickly, and even the Footstalks; but this uncertainly.

The Bark of the old Wood is of a deep olive; that of the young Shoots is green, often ting'd with red.

The Leaves are numerous and handsome. Each consists of about two Pairs of Pinnæ, with an odd one at the End; these are oblong and finely indented, and their Colour is a fresh green.

The Flowers are large, numerous, and extremely elegant. They are double, and of a good Shape; and their Colours are two, a strong

red

August. red and a paler, or in the Place of the paler a white.

The Variations under which these are mixed and blended are innumerable; but the most elegant State of all others, is when the Body of the Petals is of a delicate blueish Colour, a white just tinged with red; and the Variegation is a deep and strong Crimson, laid on in regular and even Stripes. Sometimes there are several Shades of red, sometimes only one red, and a pure white; and in some Cases the red or deeper Colour, instead of striping all the Petals, takes entire Possession of a Part of them, and is not seen at all in the rest.

Under all these Appearances the Shrub is to be considered as entirely the same, and all the Care must be to select the finest for Propagation.

The Characters are the same as in the other Roses, and the Class and Place among the *Polyandria Polygynia*.

Culture of this Rose.

The *Prænestine Rose* may be very well propagated by Layers; but the original Method, and the best is by Budding. It was originally a Variety raised by Sowing, but this is a less certain, as well as more tedious Method.

The Gardener who would have the finest Kinds in full Perfection, must chuse Cuttings from a flourishing and fine Shrub, and bud them upon the *Frankfort Rose*.

The Method of doing this is alike in all Trees and Shrubs, and we have delivered it at large on a former Occasion. All that need be observed in particular here is, that the *Frankfort* is preferable to any other Kind as a Stock, because it produces fine clean Shoots, which unite with the Buds with great Facility; and that in the performing it, all that is required to ensure the Success, is a good Day, and with a careful Hand, Expedition.

The latter End of June is the best Season for

it: An Evening of a cloudy Day should be chosen for the Work; when there is no Wind, and a mild damp Air.

The Cuttings must be taken off just before they are used; and the Stalk being prepared, they must be let in at once, and secured by a slight tying of old Bafs well soaked.

Let the Stalk be budded near the Ground, and after three Weeks let the tying be loosen'd to give free Circulation.

Thus far the common Practice agrees with us, and this is all most do; but there is a Method of improving greatly upon this Principle.

When the budded Part has one Year's Growth, let it be carefully put into the Ground in the manner of a Layer, fixed down with Pegs, covered three Inches deep with rich Mould, and water'd often: it will thus take root kindly, and will give instead of a budded Stock, an original Tree, which will still retain with the delicate Nature of the Bud, all the good Qualities of Hardiness and strong Growth of the *Frankfort Kind*.

Nor is this all the Advantage. We have observed in treating of the more common Kinds of Roses, that the easy Way of propagating them is by Suckers.

In the common Way of preserving the *Prænestine Rose* upon the *Frankfort Stock*, all the Suckers will be of the *Frankfort Kind*: but when the budded Part has been thus laid, and has rooted, it becomes an original Tree, though with the borrowed Qualities of the other; and the Suckers which it annually produces are of the *Prænestine Kind*, not of the *Frankfort*. This gives a free Way of encreasing the Stock, and saves the Trouble of laying the Branches: all the Care needful in regard to the Suckers, is to take them up every Year; for after they have stood longer than one Season, they do not take root kindly. These should be planted out in the Nursery, and then brought to a Size for the Garden.

3. SCARLET CHALCEDONIAN LILLY.

Pl. 46.
Fig. 3.

Among the first Plants we received from the East, this obtain'd a Place in our Gardens, and all who have written of Flowers in later Time have named it. They have called it according to their Fancy a Lilly, or a Martagan.

Our Student knows that Martagans are true Species of the Lilly, and therefore will not cavil at the Term.

C. BAUHINE calls it, *Lilium Byzantinum miniatum*, the scarlet Lilly of Constantinople; and when the Flowers are numerous he ranks it as another Kind. RAY saw his Error; and LINNÆUS confirmed that Author's Judgment, placing the two as the same Species.

The common Writers call it, *Martagon Byzan-*

tinum, and *Martagon Constantinopolitanum*; and some *Hemerocalcis Chalcedonica*.

Our Gardener knows it by the Name of scarlet Martagon, but his Oracle, transcribing from TOURNEFORT the Mistake which he copy'd from C. BAUHINE, he follows in the same Path, and supposes the Kind with few and that with many Flowers, to be distinct in Species.

LINNÆUS refers the Plant to the Lilly Kind; and adds as the Distinction of the Species, *foliis sparsis lanceolatis, floribus reflexis, corollis revolutis*: lanceolate scattered leaved Lilly with drooping Flowers, whose Petals turn up.

The Root is bulbous, and hung with many Fibres.

The

August. The Stalk is round, thick, two Foot and a half in Height, and hollow; of a pale green, spotted in the lower Part with red, and marked with Rays from the Head of the Bulb.

The Leaves stand irregularly, and are numerous. Their Colour is a fresh green, and at the Edges they shew a little Hairyness. They are rib'd and sharp pointed; and oblong, and largest near the Middle.

The Flowers are large and beautiful; their Form is that of the Martagon Flower, but they are much bigger, and their Colour is a high and noble scarlet.

The Characters are the same with those of the other Lillies.

The Flower rises naked from the Footstalk, and is composed of six Petals, which unite at the Bottom, forming a small campanulated Base.

The Filaments are six, and they are crowned with large scarlet Buttons.

The Style is single, and terminated by a thick three parted Head.

The Seed-vessel, from whose Rudiment it rises, is oblong, and marked with six Furrows, and contains in three Valves numerous Seeds in double Rows. The six Filaments and single Style shew the Plant one of the *Hexandria Monogynia*.

Culture of this LILLY.

It is a Native of the East: yet will bear the Cold of our Winters, and thrive perfectly well in an open Border: but they do ill who because it is hardy, suppose all Soils are equal to it.

There is no Plant so susceptible of Disadvantage, or Improvement, from the Variety of Management in the common Respect, of Place and Temper of the Mould, even when the Gardener gives himself no more Trouble than the propagating it by Off-sets: but when he follows the true Method of raising it from Seeds, he will have in his Power almost an endless Scope of Advantage.

Though this Plant will bear Cold, let the Gardener understand that it will not bear the Shade of Trees, nor ever thrive in a Soil enriched with Dung.

Therefore whether he raise it from Seeds, or only plant the Off-sets from other Roots, let him thus prepare a Compost for it:

Mix equal Parts of rich Meadow Earth and Pond Mud; add to a Barrow of these a Bushel of Wood-ash Earth, and a Peck of Soot. Let this lie exposed to the Air some Months, turning it at Times.

Chuse a Part of the Garden that lies dry and open, fronting the South East: dig out the Mould from part of a Border, and fill up with this.

In the Beginning of *September* let the Off-sets be planted in this Bed at a Foot Distance, and cover'd two Inches with Mould: and every Year afterwards they must be taken up and planted again in a fresh Soil at the same Season.

Thus may the Plant be propagated with little August. Trouble; and its Flowers this Way will be equal to those of the original Root: but to improve the Flower, the Gardener must begin from the original Source, and raise it from the Seed. For this we shall give him Directions from a successful Experience.

Let him mark for Seed two or three Plants when in Flower, selecting such as have a great deal of red upon the Stalk, and have the Leaves ting'd with brown: they must be such as promise many Flowers; but he must only suffer about three to blow upon each, and the stronger the Colour of these the better: they must be such as stand in an open Situation; for under too much Shade the Leaves are greener, and the Flowers are paler: this *CLUSIUS* long ago discern'd, and our own Experience confirms it.

The Seeds from these Plants must be saved with great Care, and dry'd on a paper'd Shelf.

In the second Week in *August* prepare a Bed in a Part of the Seminary open to the Morning Sun: make it with the same Compost, and scatter on the Seeds.

Cover them a Quarter of an Inch by sifting Mould over them, and thus leave them to Nature. The Bed must be weeded often; and watered as there may be Occasion; and the Plants thin'd where they appear too thick.

In *August* let the Bulbs be carefully taken up, and planted in a fresh Bed at more Distance; and in the Beginning of the *September* following, let them be again removed and planted at a Foot Distance.

The succeeding Year they will flower, and the Gardener will see among them a Variety very well repaying his Trouble. He will have Plants with a few, and others with very numerous Flowers: some with greener Leaves and fainter Flowers; others robust and rough, with discoloured Foliage; but with Flowers of a scarlet, deeper and finer than he can match from all the Colours of the Painter. He will have Variety in their Size also, as well as Number and Colour; and in some Plants the Leaves will be spotted with purple, and the Flower Blood colour'd.

As the Number of Plants from this Sowing will be very great, the second Year's flowering should determine how to dispose of them. It would be rash to resolve upon the Appearance of the first Bloom, because they often alter after this.

When they flower the second Summer, let the Gardener mark the finest, and those most differing from one another: these, when the Roots are taken up in the succeeding Autumn, should be planted at fifteen Inches Distance, in a Bed made up in the Flower Garden, according to the Direction we have given for managing the Off-sets; and the others may be planted out in common Borders, for there will be few but what are worthy a Place in the Garden.

After this the finer Kinds must be taken up every Autumn, and their Off-sets separated; and they

August. they must every Season have a fresh Quantity of Compost.

I have seen from this Management a Plant with one Flower only, which has continued unaltered in that State many Years; but from the Bigness and fine Colour of the Flower, has given a fine Exception to the Gardener's common Rule, that those in this Kind are unworthy Notice, which have not many on a Stalk. Every Thing that is excellent in its Kind is to be valued:

These Observations give Credit to what those who first cultivated the eastern Plant in *England*, have left concerning it; for they have made the same Remark, that this Lilly will often be very fine with only one Flower. It seems from this, and many the like Instances, that they understood the Culture of bulbous Plants better than modern Vanity allows, or would be pleased to hear.

4. The DOUBLE BLOSSOMED BRAMBLE.

Pl. 46.
Fig. 4.

Our Hedges, under the due Improvement, furnish Gardens. It would not be easy to name a meaner Shrub than the common Bramble; yet curious Art has raised its single Flower to a rosy Fulness, and a rosy Colour; and rendered it a Favourite among the finest Plants of remote Regions.

Luxuriant Nature has sometimes mimicked the Gardener's Labours, and added to the Number of Petals in this Flower in its native Hedge; but 'tis in the more regular Culture alone we can expect its Perfection. In the single State all Writers on Plants have named it: they call it *Rubus*, *Rubus vulgaris*, and *Rubus major*; some *Rubus fructu nigro*: the Bramble, the common Bramble, the Great, and the black fruited Bramble.

The Fruit is sometimes white by accidental Variation, and from this RAY has raised an imaginary Species: in the double State of the Flower, *Magnol* and others, have called it *Rubus flore albo pleno*: the white double flowered Bramble: this is but half its Beauty; for the Blush of red in its Colouring, when fully perfect, is equal in Elegance to the Doubleness.

LINNÆUS, who justly refers this and the white fruited Bramble as Varieties to the common Kind, calls that *Rubus foliis quinato-digitatis, ternatisque caule petiolisque aculeatis*: the Bramble with prickly Stem and Footstalks, and with Leaves digitated in fives and in threes. A long Name for a common Shrub, but needful to distinguish it from the others of the same Genus.

The Root is long and spreading.

The Stem is weak, purplish, and drooping; and that and the Footstalks are equally beset with Thorns. Several Boughs usually rise together, and spread themselves every Way: these droop with their own Weight; and so full of Life is the Shrub, that when they touch a favourable Soil, they will root again at the End or Head, and thence send out new Shoots; which, if left to Nature, root at their Heads again.

I have seen in the *Ile of Ely* an Acre of rich moist Ground, neglected by the Owner, cover'd with the arched Boughs of this common Shrub; which took off all the Miracle of the arch'd *Indian* Figtree.

Nº 46.

The Leaves are not inelegant, three or five adhere to one common Footstalk, each with its particular Pedicle: they are oblong, but considerably broad; irregularly serrated, of a deep but not unpleasing green on the upper Side; and whitish underneath; the middle Rib also on that Part is prickly in the Manner of the Footstalk.

The Flowers terminate the Stalks and Branches, and rise in Numbers also from the Bosoms of the Leaves; they are numerous, and very elegant; so many diminutive Roses; round, full of Petals, white, with a delicate Blush of Crimson, and very regularly form'd.

Their internal Structure is to be traced by the Student in the single Flowers of the common Bramble; for here, as in other Cases, where Nature is luxuriant in Petals, they are disturbed, obliterated, and abortive.

In the common Bramble the Flower has a Cup divided into five permanent Segments; and is itself composed of five broad, rounded Petals fixed to them.

The Filaments are numerous in the Centre, and fixed also to the Cup: this shews the Shrub to be one of the *Icosandria*: when they are numerous, and fix'd to the Receptacle, the Plant is of the *Polyandrous* Tribe.

In the Midst of the Filaments rise numerous short Styles, each fix'd side-way to a Rudiment of a Seed, and each terminated by its little Head; this places the Plant among the *Polygynia*.

The Fruit is composed of numerous Grains forming one complex Berry, and each containing one Seed.

Culture of the DOUBLE BRAMBLE.

Though the Hedge knows no Shrub so common as the ordinary Bramble, not three Plants of it in a Kingdom, shew naturally double Flowers.

If it happen that in the Neighbourhood of the Gardener there is found this Singularity, he will do well to bring it into his Ground, for he will easily improve it into the full Beauty of the double Kind; good Nourishment will encrease its Bigness, and a dry Soil will give the elegant Blush to the Colour.

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August. Whether from such a Stock, or from one already raised to Perfection in another Garden, the Culture and Propagation is easy. No great Care can be needed to make the rude Shrub of a Hedge live in good Ground; nor can there be any Difficulty in increasing a Plant whose Shoots will take root wheresoever they touch the Surface. The Root loses nothing of its Hardiness for having finer Flowers; nor is the Principle of Life less strong in the Garden than the Hedge.

A great Advantage in the proper Disposition of this Plant is, that with all its Elegance it will live where other Shrubs would come to nothing. No Soil is too poor to feed the Root, no Shelter, or over-shadowing of Trees prevents its flowering.

Let the Gardener therefore see for a Place

where other Shrubs thrive ill; and mark it for August. the double flowering Bramble.

As to its Propagation, Nature points the Way: it is to be by Layers. These will take root where they do but touch a proper Ground, much more when they are regularly plac'd, covered, fixed down, and watered.

One Year after laying they may be taken up, and planted in the Places chosen for them. They should be water'd at first; but after the Roots have once shot their Fibres into the new Mould, nothing hurts them. They should be allowed Room to spread; and their Suckers taken off always in Autumn. They may be planted out as the Layers; but whether they were wanted or not, it would be right to take them away, for they would hurt the original Plants.

5. M A N D R A K E.

Pl. 46. The Stories credulous Men have told relating
Fig. 5. to the *Mandrake* Root are all false and frivolous; but the Plant is singular enough to deserve a Place in every good Collection.

The Writers on Botany have known it from the earliest Time, all name it, and all under the same common Term *Mandragora*. They add indeed the Terms of *mas* and *femina*, the Male and Female Mandrake: the former to the Plant when the Fruit is round; the latter, when it is Pear-shap'd; but the Distinction is ill supported. The same Seeds produce both, and LINNÆUS is justify'd in referring them to one common Kind; he uses the Term *Mandragora* as the Name of the Genus; and as he allows no Distinction of Species, adds no Epithet.

The Root is long and thick, simple, or divided, as Accidents determine, and hung with many Fibres.

From this rise numerous and vast Leaves, long, moderately broad, waved at the Edges, pointed, and of a dusky green.

Among these spring up a Number of little Footstalks, slender, redish, three Inches high; each at its Summit bearing one large Flower.

This is of a whitish Hue, more or less ting'd with a deep purple; succeeded by a round or oblong large Fruit.

The Cup in which the Flower is placed is hollow'd as a Bell, form'd of one Piece cut into five Parts, and rib'd. One Petal forms the Body of the Flower, but it is deeply cut into five Segments.

In the Midst stand five arched Filaments, hairy at their Bottoms, and surrounding a roundish Rudiment, from which rises a single Style. The five Filaments place the Plant among the *Pentandria*, the fifth Class of LINNÆUS; and the single Style shews it one of the *Monogynia*.

The Fruit is divided into two Cells; and has,

with a fleshy Receptacle convex on each Side, a Number of Kidney-shaped Seeds.

The whole Plant has an unpleasant Smell, and a gloomy Aspect.

The Root, concerning which so many Follies have been divulged, and however strange, believed, differs in nothing material from other long Roots. Naturally it is single, and resembles nothing more than a Carrot, except in Colour. Sometimes it is divided, or forked, as we see Radishes, and in this State it has been supposed to represent a Human Body and Legs. To this the Artifice of Vagrants has added a carved Head; and often the whole has been form'd by Art from a Bryony, a Marshmallow, or an Angelica Root; and the credulous Vulgar have supposed the whole Form real.

The Mistakes of Commentators on those early Writings in which the Plant is named, the sacred not excepted, have been scarce less ridiculous than these Follies of the Mob.

The sacred Writings name a barren *Israelitish* Woman, desiring eagerly the Fruit of the Mandrake. *Dudaim* the Hebrew Name, has been understood originally to signify this Plant; but the Mandrake has been accounted poisonous.

The Commentators should have employ'd their Attention to discover, Whether this were a true or trivial Charge: instead of this, they have filled Pages with learned Folly, endeavouring to shew that some other Plant, and not the Mandrake, was intended there.

It is now known that the Fruit of the Mandrake is esculent, and innocent. FABER, of the *Lynnean* Academy, eat a whole Fruit before his Pupils; and TERENCE, who tells the Story, confirms the Truth, by assuring us that himself eat another.

All the Antients join in declaring Mandrake a powerful uterine Deobstruent.

Since

August. Since therefore the Fruit of the Mandrake is innocent, and possesses the very Qualities for which this Person mention'd in the Scriptures wanted it, how idle have been the Labours of those who would have explain'd away the Meaning of the Name. From this let such Men learn, that to explain Scripture where natural Subjects are mention'd, the Method is to study Nature; for certainly he knew these Things who made them.

Culture of the MANDRAKE.

The Plant is hardy, and almost universal. The warmest Parts of *Europe* have it wild in common, with *Greece*, *Egypt*, and the rest of the *East*; nor, though *England* wants it, is it deny'd wholly to the more *Northern*.

Its Culture in the Garden is easy.

In Places where it is native, it thrives best in a light deep Soil, and open Exposure. This we are to imitate; and in such Places, and such Soil we must raise it from the Seed; which it ripens freely with us. But this must be done in the Garden where the Plants are to remain; for one great Article in the perfecting it is, never to remove it.

Let a small Spot, in some open Part of the Ground, be selected; and the Mould being dug

out four Foot deep, let the Place be filled with August. any one of the light Composts; screening it first that there may remain no Lump or Stone in it to split the Root: for though the imaginary Resemblance of the human Form depends upon the dividing of the Root, the perfect flourishing of the Plant will be owing to its running down to a great Depth single, and uninterrupted.

On such a Bed of Earth let some Seeds of the *Mandrake*, saved from a strong Plant, and dried carefully, be sown in the Beginning of *September*.

Let the Bed be weeded and water'd occasionally; and when the Plants are so far advanced that it can be seen which are the strongest and most promising, let the weak ones be taken up, and these left at two Foot and a half Distance: they will after this require only the common Care of weeding and watering, and they will flower annually, and produce ripe Fruit in full Perfection. The Depth to which the Root strikes, prevents all Necessity of renewing the superficial Part of the Soil.

We have shewn in what Manner the Gardener is originally to prepare for it, and after this it will grow every Year stronger; for we know no Plant whose Root so long retains its Vigour.

6. SPANISH BULBOUS IRIS.

Pl. 46. We have mentioned several of the *Iris*'s of this Kind, all elegant, and all hardy: this is another, for both those Reasons very well deserving the Care of the Gardener. Few of the Writers on Flowers have named it; and from the Singularity of its Colouring, we may thence conclude they have not seen it.

The Tincts of the *bulbous Iris* are almost universally blue, violet and yellow: a flesh colour'd Flower could not have missed their Notice who described as if distinct Species, those slight Changes made by a different Colouring of the upper or the lower Petals.

DE BRY has figured it under the Name of *Iris bulbosa Hispanica non descripta*: the new Spanish bulbous *Iris*: the Variation in its Colour and Form, though very considerable, are not enough to give it place as a new Species: it is only to be consider'd as a Variety of the *bulbous Iris* we have before describ'd; and which LINNÆUS calls *Iris corollis imberbibus, foliis subulato-caniculatis caule brevioribus*: beardless *Iris* with hollow'd and pointed Leaves, shorter than the Stalks.

This Name the Student is to understand as given to the Plant in its original State; for among other of its Singularities in this Form, the Leaves often equal the Stalk in Height.

The Root is considerably large in Proportion to the Plant; and in Comparison of the other

Kinds; whitish, and hung with Fibres.

The Leaves are few, but long; they are of a fine fresh green, sharp pointed, hollow'd, and of a firm Substance.

The Stalk is two Foot high, slender, and delicate; of a pale greenish Colour ting'd often with red, and not at all branch'd.

The Leaves on it are oblong, narrow, and sharp pointed. They are naturally of a paler green than those from the Root, but often become redish, especially the lower ones.

One Flower naturally terminates the Stalk, and this is extremely delicate: it consists as the other *Iris*'s, of six Petals, three of which turn downward, three stand up, and is furnish'd also with three leafy Heads to the Style.

The universal Colour is a pale fleshy red. The three upper Petals are paler; the three lower deeper, and each mark'd with a yellow Spot toward the End; sometimes also these lower Petals are streaked with white.

The Characters are the same with the other *Iris*'s.

The Flower has no Cup.

The six Petals unite at their Bases; and there are three Filaments with long Buttons, and a single Style with a three-parted Head. This shews the Plant like the others, to be one of the

August, the *Triandria Monogynia* of LINNÆUS; his third Class, and its first Section.

Culture of this IRIS.

We have observed that this elegant Plant is no more than a Variety of the *bulbous Iris*, not a distinct Species; the Gardener will therefore understand easily, that his Method of obtaining it must be by Seeds.

Let him remember what we have told him on many of the like Occasions, that his great Hope is to arise from sowing a large Quantity; and afterwards selecting for a second Growth, the Seeds of those particular Plants which comes nearest his expected Kind.

In order to this, let him mark first for Seed some strong and good Plants of the *bulbous Iris*.

Let him ripen some, and harden this as we have directed on other Occasions; and sow it with the Care we have prescribed in treating of the common Kind. August.

When the Plants flower he will see a great Variety, and from among these he must select some particular Plants for Seed again. These should be such as have pale Flowers, and upon the whole appear delicate, and less robust than the others.

These sown upon a Soil somewhat poorer than the Compost directed for the rest, will improve in this natural Delicacy; and he will have several with elegant, pale, simple, and variegated Flowers.

This Method of raising from the Seed is the only Way of procuring a continual Variety, and this never fails.



C H A P. II.

Care and Management of the Ground.

THE first Care of the Gardener this Week should be that of his Auricula Plants. 'Tis now some Time since he has been entertain'd with the Variety and Elegance of their Flowers: Nature has had her Time of Rest after flowering, and is now preparing to form the Bud for the succeeding Season. This must be assisted by all possible Means.

The Earth in which they have grown in their Pots being small in Quantity, is by this Time exhausted; and Nature, which is preparing to send out new Shoots from the Root, is prevented by the decay'd Ends of the old. This is to be remedy'd, and the Plants clean'd before they are fresh potted.

Let a Quantity of the Compost we have directed for this Flower be laid ready, and then begin with the Plants: shake out the Ball of Earth from the Pot, pick it away from the Roots except a very small Quantity; trim their extrem Fibres, and pull off any decay'd Leaves there may be about the Plant.

Pour in some of the Compost into the Pot, and set the Plant upright upon it; fill in more; and by degrees closing it well about the Roots, bring it as high as the Head of the Plant. Give a gentle Watering to settle it, and then draw on a little more of the Compost to make Allowance for the sinking.

Clean and plant every Root in the same Manner, and then set the Pots in a shady Place, and continue watering them gently every other Night till they are perfectly fix'd again, and rooted in their new Mould.

The push that Nature is now making is for

forming the next Year's Flower, and it will be vastly strengthen'd by this timely Refreshment.

We find it necessary to remove and change the Mould of whole Beds, in which fine Flowers are to blow, much more may we be assured it is necessary to change that which is kept in the Compass of a little Pot; prevented from the common Advantages and Improvements of that in Borders, and shut as it were from those common Advantages which arise from the Moisture of the Body of the Ground, the Steams from below, and in some degree from Dews. This is a Reason why particular Regard should be had to the Earth in Pots.

We have on many Occasions directed the Top of the Mould to be taken out of these Pots, and a Supply of fresh in its Place, but this is only a partial Refreshment: there is a Time when Nature is at Rest, and when the Root of any Plant will bear to be removed without Hurt, because it draws little Nourishment.

At this Season it should be taken up and replanted in fresh Soil; and it will shew the Advantage in very obvious Characters in the next Year's Bloom. The great Care is to hit upon the right Season.

In the bulbous Plants we are inform'd of this by the decaying of the Stalks and Leaves, but in others there wants that plain and obvious Information. These we must watch with the more Care; but the great Rule will be had from the Conduct of Nature in the others. The great Effort is for the ripening the Seed, and the displaying of the Flower which precedes it. Toward this every Thing tends for the greatest Part of



1
Great white Asphodel

2
Prunastine Rose

3
*Scarlet
Chalcedoni-
an Lily*

4
Double Blossomed Bramble

5
Mandrake

6
Spanish bulbous Iris.

August. of the preceding Year, and when this is over; when the Seed has been ripen'd, or the Flower gather'd to prevent it, there is a State of Inactivity for some Weeks; and in the bulbous Kinds, the Bulb is as it were renewed.

In the fibrous and tuberous rooted, the Bud begins after that Time to be form'd for the next flowering, therefore this Space is to be chosen for raking up the Root, and refreshing it by a new Soil.

The Error of Gardeners is omitting it too long: they stay till new Fibres are shot, and they disturb that Work, which, by an earlier Application of the same Industry, they would have promoted.

While this Care is taken of the Plants which have flower'd, the Seedlings will require also their Share of the Gardener's Attention.

We have said in what Manner they are to be raised; and those Rules having been follow'd, they will be now fit for transplanting.

Let a Piece of Ground be chosen for them which is defended from cold Winds, and from the Noon Sun.

Let the Mould be dug away; and when the Place is cleared a Spade deep, let as much old Dung be thrown in as will cover the Bottom four Inches.

Let the Gardener tread this firmly down, and when he has levelled the Surface, throw in the Mould ten Inches thick.

On the Surface of the Bed thus finish'd, let him draw Lines lengthways and across five Inches distant, and in the Centre of every Square set one Plant. Let the Earth be well closed about them, and give a gentle Watering.

Let a Piece of Canvas or Matting be drawn over the Bed, supported by Hoops to shade the Plants till they are very well rooted; and they will after that require only the common Care of Weeding and Watering.

This is a Particular usually neglected, and to that is owing the Hazard of bringing the young Plants to Good: I have scarce ever known one fail in this Way of Regulation; and when it is omitted, and they receive a Check at first, they are often stunted and spoiled even though they get over it; or at the best, it takes off from the Strength and Beauty of the first Year's Flower; and the Plant being judged by that, is rejected.

As the Season advances in Heat, and the Showers are few, the Plants of any Value will require careful Assistance in that Respect; and most of all those in Pots. This let the Gardener remember as an everlasting Rule, that though potted Plants bear less Water at a Time than those in the full Ground, they require it oftener.

The Rains which sink into the Ground are not evaporated for a considerable Time; and in the driest Weather, while the Surface of the Mould is parch'd, they usually afford Nourishment to the Roots at more Depth; but it is not so in

N^o 46.

the confined small Quantity that is kept in a Pot; August. it dries soon, and it has no Refreshment from below, therefore let the Gardener give it the more by Hand; and when the Plants are in Bud, let him water them all over.

This must be done more carefully when they are in full Flower, and the best Method at that Time is to drive the little Streams of Water in among the Branches and Leaves, and let it then fall to the Mould, but not to throw on any so high as the Flowers, lest lodging among their Petals it damage them.

Once in two Days let the Gardener continue his Care in gathering the Seeds of his Flowers as they ripen, and lay them in a shady, dry, and airy Place to harden.

Some spread them in the Sun, but they follow Nature idly who do this. They will say, "That on the Plant they are left to the full Sun:" but our intelligent Pupil will answer, "There is great Difference between the being exposed to the Sun upon the Stalk of a Plant in the free Air, and laid upon a Floor or Table in the Sun-shine:" what he will thus answer from Reason, will be perfectly confirm'd by Experience; for those Seeds which are dry'd in that Manner have not half their Vigour. The true Method in these Cases, is the ripening of the Seed in the Sun, and drying it in the Shade.

Let the Gardener continue his Care of those seedling Plants of the tenderer Kind, which are to take their Growth in the Stove. Those which he has removed into larger Pots will require all his Care to shade and water them till they are rooted; and those which are yet in the small Pots, into which they were planted from the Seed-bed, must from Week to Week as they grow to a due Size, be transplanted and rooted afresh with the same Care.

In the removing of these from smaller to larger Pots, Care must be taken to bring the whole Ball of Earth with them, and to trim round the extream Fibres which appear on the Outside of it; then the Ball must be set upright in the larger Pot, upon a small Quantity of the Compost laid in for that Purpose, and the rest filled in till it is brought up half an Inch above the Surface of the original Quantity, or Ball from the smaller Pot; after this shading and watering do all the Business.

While these are preparing to take their Growth in the Stove, those which are there already must be refresh'd with as much Air as can be safely admitted.

These Plants bear the Closeness of the Stove much better in Winter than they do in Summer; and this is happily a Season, when the common Air of our unfavourable Climate may best be admitted to them.

The hottest Days must be chosen for giving the Plants this Advantage, and those in which there is least Wind.

In such a calm, close, sultry Day, let as much

7 A

Air

August. Air be let in as will refresh the Plants constantly; and let the Gardener remember, that if his Stove be small, he must shade the Glasses in the Middle of the hottest Days; for otherwise the Sun's Heat admitted through them, will absolutely scorch the Plants, as well as burn up the Mould in the Pots.

Let the Pine-apple Plants which are expected to produce Fruit the next Season, be this Week removed into the Pots in which they are to remain.

The common Practice is to neglect this to a longer Time; but the sooner they are fix'd in these Pots, and the Check of removing is over, the better. They will thus have Time to establish themselves well in the Mould before the Effort of Nature comes on for their Fruit; and that will for this Reason when it comes, be continued uninterrupted: whereas when the Removal is delay'd, the shooting of new Fibres from the Root,

and the Formation of the Bud of the Fruit are brought on together; and the Vigour which should answer for one of these Operations, is weaken'd by being divided between both, and neither is done perfectly.

These early Considerations are either unknown or neglected by the Generality of Gardeners, and this occasions the great Failure we see in the several capital Operations. Five Plants in six of the Pine-apple produce poor, small, and ill-tasted Fruit, because they were shifted too late in the Season.

The Error has been so long past, that the Gardener forgets where it lies; but if he would arrive at Perfection in his Art, there is no way but by foreseeing every Thing in the Course of the Growth, at the very Time of putting the Seed into the Ground, or of making the first Plantation of whatever Kind.

S E C T. II.

The Care of the SEMINARY, for this Week.

LET the careful Gardener still continue budding the later Kinds of Fruit Trees; and let him this Week look with a careful Eye over those which have been budded three Weeks or a Month before. The Bandages of these must be loosen'd, that the Sap may have free Course.

Let him look carefully to the Seed-beds of young Stocks for future budding. They must be very well weeded and water'd; and as the Plants advance in Height, this Care must be increased.

It is a great Article in their future Rise to give them their first Growth well; and if they be neglected at this Time, they will come up very poorly: Weeds, and a parching Sun will choak and burn them; and they will be stunted in such manner, as never to recover it afterwards.

The free Growth is a great Article in these Stocks; and like other Effects of early Error, it is often prevented by a Neglect at this Time. The Gardener finds his Stocks do not answer to their Kinds, but it is too late when he perceives the Error: it should be prevented now.

The Drought will be every where hurtful, and should be every where guarded against, by shading the more tenderer Kinds: watering, where that can be done with any tolerable Convenience; and in the larger Growths which stand regular and distant, by digging between the Rows: this answers the Purpose at once of refreshing the Earth, and destroying the Weeds; and however particular or strange it may appear to the in-

experienced, 'tis certain in fact, that the breaking the Surface of the Ground, answers in a great measure the Purpose of Watering, by making it receive and detain those Dews, which run off, or evaporate from a hard Surface; without affording the least Nourishment to the Plants.

This Week make up a Bed in some open Part of the Seminary for transplanting those double Cowslip and Primrose Plants we directed to be raised from Seed.

Let the Bed be of fresh Pasture Mould, without any Addition whatsoever; and let the Plants be set at four Inches Distance, closing the Earth well about their Roots.

They must have a good Watering when they are planted, and another every other Evening, unless Showers naturally fall.

They will require the Shade of a Reed-hedge from the full Sun till they are rooted; and after this they must be frequently weeded, and in dry Seasons watered.

They may take their first flowering in this Bed; and as it comes on in early Spring, they will blow much stronger for being planted now than if it had been deferred to October; or if it had been repeated at that Season: for there would then have happen'd a Check from the Removal, at the Time when the Bud for Flower was forming.

This is a Practice not understood by the common Gardener; but it depends upon the same Principle with the shifting the Auricula's at this Season.

The

August. The Florist knows the Expediency of that Practice; and he may be assured, the same Rule holds good in regard to these Plants: the Primrose, Cowslip, and Auricula, are nearly allied in Nature; and as their Time of flowering is the same, or little different: their Buds are formed for that Purpose at or near the same Period. On this depends the Propriety of the Practice we have named.

There will also result another Benefit from the Use of common Pasture Earth at this Time of

planting them, which is that when they come afterwards to be sorted, and the best Plants removed into a Bed of Compost; the Richness of that Ground in Comparison with the Poverty of plain Pasture Earth, will feed them in a fuller Manner, and enlarge, and greatly improve the Flowers.

These Things done among the particular Kinds, let the Gardener conclude the Work of the present Week in this Quarter, by a thorough weeding in every Part of the Ground.



S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

THE Care of the ripening Fruit demands at this Time all the Gardener's Attention. Every Morning and Evening, and after every Shower, let him look after Snails; and every Day let him renew the Sugar and Water in those Vials we direct him to hang upon every Part of the Trees.

It will be proper also for him to hang up Scarecrows of Feathers, or Wings of Birds, or entire Birds with the Entrails taken out, to fright away the Devourers of that Kind; and if they are, in spite of this, troublesome, he must place Lime Twigs about the Trees, and now and then fright them away by Discharges of a Pistol.

They do more Hurt than is imagined; they peck and wound ten of the Fruit for one they eat; and wherever their Beaks have made the Way, the lesser Devourers are sure to follow.

At the same Time that these Methods are taken to prevent Destruction by Insects, and other Devourers, Care must be had that no Accident prevent the ripening of what his proper thinning, and subsequent Protection, have kept upon the Tree.

To ripen well, the Fruit requires a due Degree of Shade and Shelter, but nothing more: too much or too little Sun will be equally hurtful.

The Gardener has taken Care in the Pruning and Management of the Branches, that as much Wood, and as many Leaves are left on as will

answer this needful Purpose: but let him now see that they keep in their Places; where a Branch has blown out of its right Situation, by the starting of the Nails which held it to the Wall, or any other Violence, it leaves some Part without the Shade its Leaves were destined to supply, and gives too much cover to some other.

This must be reduced to Order: and if any Foulness appear upon the Tree, or any Insects of the Caterpillar Kind upon the Leaves, they must be pick'd off.

In many Cases it is necessary to bud the Fruit Trees after they are brought into the Garden; and when this has been done, there will require a particular Attention to them.

The Gardener knows how apt budded Stocks are to shoot from below; and that this is always hurtful, as those Shoots can be of no Service, and as they rob the Bud of Nourishment: this Accident will be much more likely to happen to Trees budded in their Place in the Garden; where the Soil is better than in Nurseries, and where the Trees have more Room, and more Opportunities of quick Growth.

These Shoots must be carefully taken off, that all this Nourishment may go to the Buds; and the same Methods taken to promote the free Growth of these, as of all other Trees in the Garden, by keeping down Weeds, and stirring the Surface of the Ground.

August.

August.



S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

THIS Week let the Gardener get some Spinach Seed into the Ground, for a Supply in Winter, and till the Spring Spinach comes. The hardier Kind is fittest for this Purpose, and this is the Burdock Spinach, or large rough seeded Kind.

Some Piece of Ground where an early Crop has been cleared off, will very well answer this Purpose.

We ordered last Week the Onions to be taken up, and no part of the Ground will better answer the Purpose, than where that flight rooted Crop has stood. A little old and well rotted Dung should be strewed over the Ground, well mixed with the Mould in the digging, and the Surface levelled.

Let the Gardener see that his Seed be fresh, and well ripened; for Spinach is a Plant very apt to fail when any due Care is neglected in the sowing. 'Tis best to sow Seeds of his own saving, for 'tis hard depending upon what are kept for Sale: a cloudy Day should be chosen when there is little Wind, and the Seed sprinkled thick, especially if there be any Doubt of its Freshness.

If no Rain happen in two or three Days after the sowing, the Piece must be watered; and this must be repeated once in three or four Days, if no Rain comes, till the Plants appear.

When the Plants shew some Strength they should be thin'd, and cleared from Weeds: one Operation will very well answer both these Purposes, and it is best done by Hand: the common Way is with the Hoe, but this does the Office in a poor and slovenly Manner; nothing would be more easy than to do it the other perfect Way.

If the Spinach be sown on Beds four Foot wide, with Alleys between, the whole may be performed by Hand with Ease and Expedition:

all Weeds should be taken up, and the strongest Plants of the Spinach left at five Inches Distance. After this the Beds should have a good Watering, and the rest of the Growth will go on with Vigour.

Thus it may stand without farther Care a Month. It will require then to be clean'd again in the same Manner, and after that to be weeded once more before Winter. The Weeds would starve and choak it if suffered to remain to take any considerable Growth, for Spinach is a weak Crop at first.

In the Middle of *October* the Gatherings may be begun, and the Plants will furnish good Crops all Winter. They do not naturally run up to Stalk at this Season; but Nature spends all her Strength in furnishing good Leaves.

The Method of Gathering is to be founded on this: the Plants are not to be torn up, but their large Leaves taken off; and as those in the Centre are left, they will grow out upon the others being taken away. Thus there will be a Succession from Time to Time; and the Bed being proportioned to the Demand, there will be a Supply all the Season.

In Spring these Plants will run up to Stalk. A proper Number are then to be left for Seed, and the rest pulled up. This Seed must be suffered to ripen perfectly, and then be well dry'd and sown, as we have directed, the following *August*.

The Kinds of Spinach for Spring and Summer Use are different from these, and require another Management. This we have given before.

The whole Kitchen Ground will require at this Time to be carefully weeded, and the young Crops must have frequent Waterings.

Caterpillars and Snails must be pick'd off the Plants, or destroy'd in their lurking Places; and the Ground clear'd as fast as the Crops go off.

E D E N :

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R XLVII.

For the second Week in *AUGUST*.

S E C T I O N I.

FLORA, or the P L E A S U R E - G A R D E N.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. OVAL LEAVED CLEMATIS.

August.
Pl. 47.
Fig. 1.

IF Singularity can demand Attention, this Plant claims no small Share of it; by an upright ridged shrubby Growth, with Flowers perfectly unlike those of the Generality of other Plants, firm in the Petals, and in the Centre downy. Its easy Culture adds something to the Merit, and its hardy Permanence.

The Authors who have written on Plants, have in general named it; and most under the same Title *Clematis*: some have written it *Clematitis*. They have added *Pannonica* from its Country, and *Cerulea* from the Colour of the Flower; *Hungarian* and blue *Clematis*; and some *surrecta*, and *erecta* from its upright Growth, most of the other Kinds being Climbers, as the original Name expresses.

LINNÆUS continues the Name *Clematis* to this Genus, under which he comprehends also the *Flammula* and *Viticella* of other Authors; and he adds as the Distinction of this Species, *foliis simplicibus*, *ovato-lanceolatis*: *Clematis* with undivided Leaves, of an oval but somewhat lanceolated Form.

The Roots are numerous, long and spreading; yellowish on the outer Part, and strengthened with a white woody Pith within.

The Stalks are numerous, two or three Foot Numb. XLVII.

high; firm, fluted, and divided into some few Branches.

The ground Colour is a pale green, and the Ridges between the Hollows are stained with purple.

The whole Stalk is ridged in the Manner of a Piece of Wire, and is a little hairy.

The Leaves stand two at a Joint, and the Stalk swells out into a thick Knot at their Base. They have no Footstalks; and they are large, of an oval Shape, a firm Substance, and a dull green Colour, with very high longitudinal Ribs on the Back or under Part, and hairy at the Edges.

The Flowers terminate the Stalk and Branches, and they are very beautiful; their Colour is a perfect violet blue, and they hang drooping. they are large, and each is formed of four Petals, oblong and sharp pointed; waved a little at the Edges, high rib'd, and lightly hairy; and in the Centre stands a thick downy Tuft of a whitish Colour.

The Flower in this Plant has no Cup, but Nature makes an excellent Provision for it while in the Growth. The Stalk which supports it has always two Leaves placed at a small Distance below it when full blown; but when in the Bud, these instead of spreading opposite as they

August.

August. do afterwards, point upward; and being hollowed in the Manner of the Halves of a Nutshell, close at the Edges. These appear Buds; and the young Botanist would be very excuseable if he supposed them the two Leaves of a proper Cup, on separating them.

The Bud is found naked, and erect in the Hollow; as it grows toward Maturity its Footstalk lengthens, the Leaves separate and fall horizontally, and soon after the Top of the Stalk droops; and the Flower obtaining its due Bigness, opens at the four Points, and discloses that singular Head or Tuft of downy Matter within.

This is formed of numerous silky Filaments, to which adhere the Buttons; and in the Centre of these stands a Cluster of pointed Styles, with simple Heads rising from the Rudiments of so many Seeds.

The Filaments are white and hairy, the Buttons long and furrow'd.

The Styles are white and silvery; and their Heads also white, but without that Gloss. When the Flower is fallen, the Seeds appear in a naked Cluster furnished with the Styles.

The Filaments adhere to the Receptacle, and this with their Number places it among the *Polyandria*; the numerous Styles among the *Polyginia*.

Culture of this CLEMATIS.

It is a Native of Hungary, and many other of the northern Parts of Europe, and thrives best wild in a firm tough Soil, and where there is some little Shade. This we should imitate and improve in its Culture in the Garden.

Let the Compost in which it is raised be equal Parts of good Garden Mould, and firm loamy

Earth from a Pasture; and the Place some Part of the Ground where there is a Shelter from the Noon-sun, and from cold Winds. August.

The usual Manner of propagating it is by parting the Roots; and with due Attention afterwards, the best Gardener may be allowed to do no more.

The Seeds are long before they shoot, and the Plants do not flower the first Year, neither are there any Advantages of Consequence from this Practice. The Plants from Seed are usually bolder and more vigorous, and their Flowers better coloured than ordinary for the first Year; but if the parted Roots be managed well, the Plants raised from them will keep their full Perfection; while the others, after the first Bloom, will lose their Superiority, and come to an exact Equality with the Rest.

The Time for parting the Roots is October, and they must then be planted at two Foot and a half Distance, and covered two Inches.

Every Year at the same Season they must be taken up, and reduced to a proper Bigness, and planted again in the same Place, but in a fresh Parcel of a Compost.

After these Plantings it will be proper to give once or twice a little Water, and at all Times to allow them the common Advantage of being kept clear from Weeds.

As there is no Design at any Time of saving Seeds, the Flowers should be picked off as they decay; and by this Means, and the Assistance of now and then a Watering in dry Weather, there will be a Succession of Bloom throughout the whole Summer; very singular, and to every Eye very pleasing.

2. ALOPECUROIDE ASTRAGALUS.

Pl. 47.
Fig. 2.

There is scarce so singular a Plant in our Gardens as that we here present the Reader; and though it can by no means come under the Denomination of a Flower, few are more elegant. Its whole Form pleases the Eye, and its Hardiness and easy Culture are a farther Recommendation.

The late Writers on Botany, in general, have named it. TOURNEFORT calls it *Astragalus alpinus procerior alopecuroides*: tall Alpine Fox-tail Astragalus. — LINNÆUS, *Astragalus caulescens spicis cylindricis subsessilibus calycibus leguminibusque lanatis*: upright Astragalus with cylindrick Spikes of Flowers, almost without Footstalks, and woolly Cups and Pods.

The Root is fibrous and spreads far.

The Stalk is round, thick, upright, hairy, and a Yard high; of a pale green, not branched, jointed, bent a little from Joint to Joint, and hollow.

The Leaves are extremely singular and beau-

tiful. One stands at each Joint of the Stalk, and they are of the winged, or pinnated Kind, a Foot in Length; and narrow. The Rib is pale, and covered with a long woolly Down.

The Pinnæ are about four and twenty Pair on each, with an odd one at the End: they are oblong, moderately broad, undivided, and of a pale green, covered with the same woolly Hairs which overspread the rest of the Plant; and the Ribs are beautifully twisted, or waved in their Course.

The Flowers are moderately large and yellow, and they are clustered together in very elegant thick Heads: these are of the Bigness of a Hen's Egg, and they appear much of that Form at first; but as the upper Flowers open, they become cylindrick. They are placed in the Bosoms of the Leaves, almost without Footstalks, and their Cups are woolly as the rest of the Plant. The woolly Matter upon these is white, very long, and thick set, and adds not a little to the Beauty of the Tuft: the pale yellow Flowers appearing with a parti-

August. particular Lustre as they break out from this silvery Bed.

The Leaves stand at considerable Distances, and these noble Heads of Flowers rise erect from their Bosoms, and run up close to the Stalk: the whole Plant has a singular but not unpleasing Smell.

The Flowers are of the *Papilionaceous* Kind: each is placed in a tubular bloated Cup, formed of one Piece, and terminated by five narrow Points; the two uppermost of which stand wider asunder than the others. These Points are of a fine pale green, the rest of the Cup is covered thick with the woolly Matter.

The Vexillum of the Flower is very large, oval, nipped at the Top, and turned back at the Sides: the Alæ and Carina stand together in a little Body defended by the Vexillum; they are of equal Length, or nearly, and the Alæ are moderately broad and obtuse; the Carina is turned upward, and nipped.

The Filaments are ten, and arranged in two Bodies; nine form a kind of Cylinder with their united Bases, and stand separate only at the Top; the other one is loose, and this lies over an opening left at the Top of the Body of the others.

The Buttons are roundish, and orange coloured.

The Rudiment of the Seed-vessel is single, and cylindrick; from this rises a small tubulated Style crowned with an obtuse Head.

The Seed-vessel is an oblong Pod with several Seeds. The Cells bent one way. The two Af-

formments of Filaments shew it one of the *Dialypia* of LINNÆUS.

Culture of this ASTRAGALUS.

The Plant is a Native of several Parts of *Europe*, and the Seeds of it have lately been received from *Siberia*. It loves a deep rich Mould, and will bear any Exposure in our Gardens.

The Seeds ripen very well with us, and the best Manner of raising the Plant is this:

Dig up in the Nursery a Bed of good Mould; and in the latter End of *March* level the Surface, and scatter on some of the Seeds saved from a strong Plant, and kept dry during the Winter.

When the Plants have some little Strength, take up the weakest, and leave the others at eight Inches Distance. Thus let them stand till *October*, only keeping the Bed clear from Weeds, and in dry Weather watering it.

Then let some deep Holes be opened in different Parts of the Borders where the Plant is intended to flower; and let the Plants be taken up to the full Depth of their Roots, and brought in with a Ball of their own Earth.

Let them be planted with Care, and the Mould be settled about them by a moderate Watering. Thus they will root well during the Winter, and flower the succeeding Year with great Strength. They should not be tied up to Sticks when they rise to Stalk, for their Stem is of sufficient Strength, and there is a pleasing Wildness in their free Manner of growing.

3. ORIENTAL BETONY.

Pl. 47.
Fig. 3.

This is another of those Plants which Curiosity, more than a Regard to their Beauty, has brought from remote Climates into our Gardens. But as it requires no great Trouble in the Culture, 'tis very well worthy its Place among the rest.

The late Authors, in general, have described it, and there is so much of the Betony Form about the Plant, that all have referred it to that Genus. They call it *oriental Betony*; and *TOURNEFORT* in particular, *Betonica orientalis angustifolius & longissimo folio spica florum crassiori*: thick spiked Betony of the East, with very long and very narrow Leaves.

LINNÆUS and Van ROYEN characterise it much more properly, *Betonica spica integra, corollarum lacinia labii intermedia integerrima*: entire spiked Betony with the middle Segment of the Lip of the Flower undivided.

The Root is composed of numerous thick Fibres connected to a large Head.

The Leaves rise in great Number, and have long Footstalks; they are long and narrow, largest at the Base, smaller all the way to the Point; deeply indented at the Edges, and of a light green.

The Stalks are square, thick, very robust, and a Foot and a half high; of a pale green, and a little hairy.

The Leaves on these are placed in Pairs, and at considerable Distances: they also have Footstalks, and are like those from the Root, long, narrow, and notch'd at the Edges, sharp pointed, and of a pale green.

A large Spike of Flowers terminates each Stalk, and there stand others in the Bosoms of the Leaves: they are small, but in the Clusters very conspicuous; of the labiated Form, and of a delicate red with a purplish Tinct.

The Cup is formed of one Piece, tubular, divided into five long, small, and sharp Points, and aristated.

The Flower is formed of a single Petal, tubular at the Base, and bent; and at the Top divided into two Lips. The upper Lip is obtuse, erect, plain, and undivided. The lower is cut into three Segments, and the middle one of these is entire; this is singular to the Species of Betony here described; in all the others there is a Nick at its End.

In

August. In the Body of the Flower are placed four Filaments, two longer and two shorter, with roundish Buttons; and amidst these a simple Style split into two Parts at the Head.

The Seeds follow naked, the Cup serving as their Defence, and they are four in Number.

The Class to which this Plant belongs, is found in the Disproportion of the Filaments: the two longer than the others shew it is one of the *Didynamia*: and the Seeds standing naked, shew it also one of *Gymnospermia*.

Culture of this BETONY.

The Plant is a Native of the East, but bears our Winters in the open Air. It loves a deep Soil; and no Compost suits it better than the common Garden Mould. As it is a perennial fibrous rooted Plant, it may be easily propagated by parting the Roots in Autumn, but the best Method is to raise it from Seed. This ripens well

with us, and the Plants thus obtained, are always the handsomest, and most regular in their Growth. August.

The Method is this. Save Seeds from a strong and hearty Plant, and when they have been well dried, and carefully preserved through Winter, sow them in the Beginning of *April* upon a Piece of common Ground in the Nursery.

When the Plants are grown strong enough to remove, take up as many of them as are intended to be raised, and plant them at a Foot Distance in a Border of rich Mould; there let them stand all the Remainder of the Summer, and through Winter: the next Year they will flower.

In Autumn they should be taken up, and planted afresh in a new Quantity of Mould, and thus they will continue in Beauty many Years; but the best Method is to raise a new Stock frequently from Seed; for the Plant never is so perfect as the first Year of its flowering.

4. L A C I N I A T E D R U D B E C K I A.

Pl. 47. The Gardener is scarce well acquainted with Fig. 4. the Name *Rudbeckia*, but the Plant is not strange to him. Ever since we have been familiar with the *American Botany*, the specious and conspicuous Aspect of this Herb, has given it a Place in our Gardens.

The earlier Writers could not be acquainted with it, for they knew nothing of its native Country; but to those who have written since, it is very familiar. They have all described it, but under a strange Variety of Names; *Cornutus* made it an *Aconite*, adding, *Helianthemum Canadense*: the Canada Sunflowered Aconite.

C. BAUHINE considered it as a *Doronicum*, and distinguished it by its Country, and the Jaggedness of its Leaves, *Doronicum Americanum lacineato folio*. — MORISON calls it an *American Chrysanthemum*, adding, *perenne*; and *foliis divisis*: divided leaved *American Corn Marygold*; others have named it *Obeliscotheca*.

LINNÆUS discarding all these as barbarous or ill chosen Terms, eternalized *Rudbeck*, by calling the conspicuous Genus after him: he adds as the Distinction of this Species, *foliis compositis laciniatis*: *Rudbeckia* with composite jagged Leaves.

The Root is thick, and hung with many long and large Fibres.

The Stalk is firm, upright, and five Foot high; rounded, but deeply rib'd, and of a strong green.

The Leaves stand irregularly, at small Distances, and they are large.

Their Colour is a deep green, and they are divided into three principal Parts, and those again deeply cut and jagged. As the whole Leaf is large, so are all the Parts; and when these Segments are notched, as they often are in the larger

Leaves, those Indentings are vast, open, and distant. The whole Plant has a slight Hairyness.

The Flowers are numerous, large and elegant: they terminate the main Stalk, and the many Branches from the Bosom of the Leaves, they are of the composite radiated Kind, large and very beautiful. They are when full open about three Inches and a half in Diameter; and are composed of numerous, long, yellow Rays, and a Multitude of Floscules arranged in a kind of Cone, and opening in regular Succession from the Bottom.

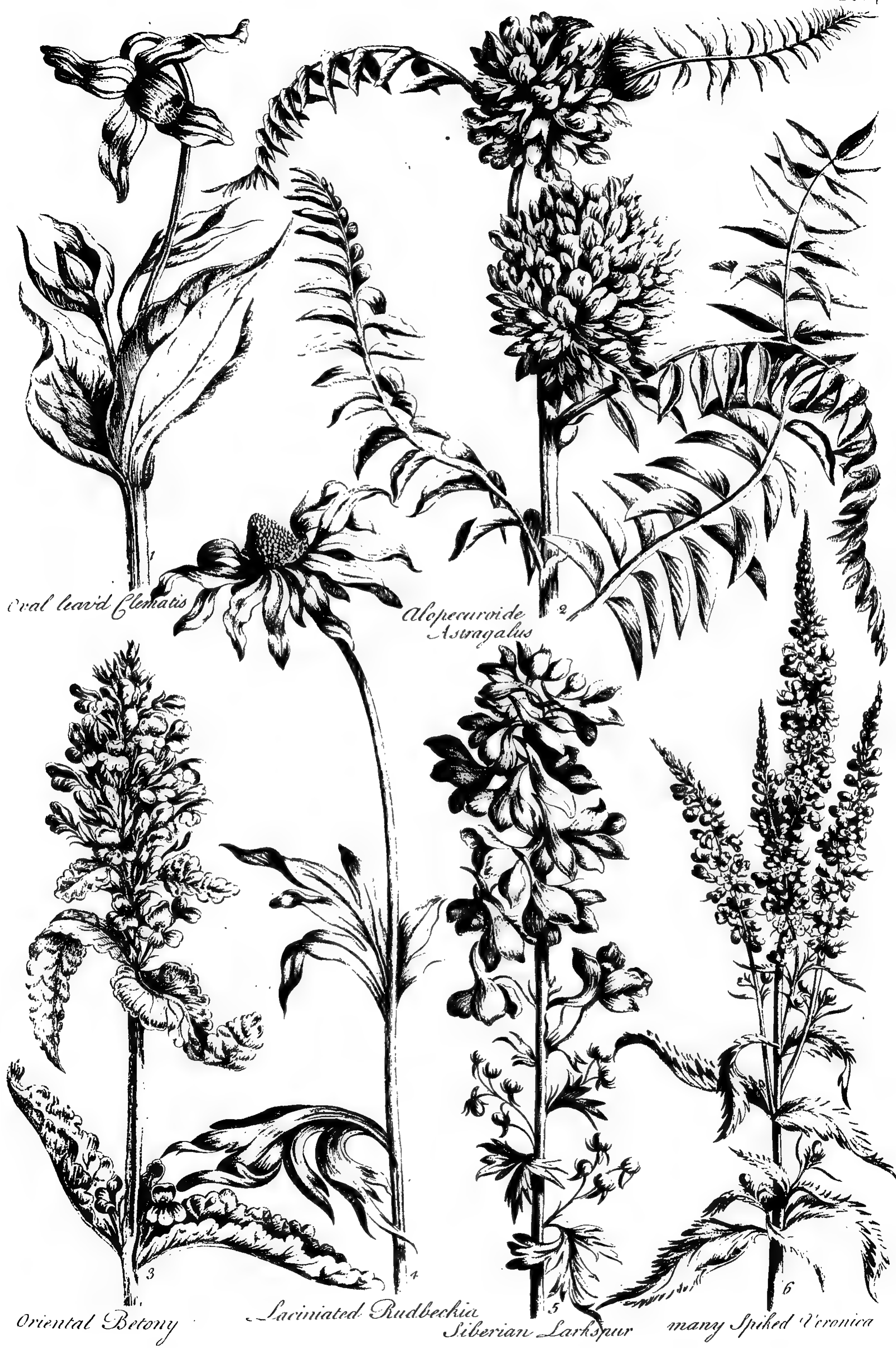
The Cup is composed of several Leaves in a double, triple, or quadruple Series; they are oblong, broad, and of a fine green.

LINNÆUS allows only twelve in the generical Character of *Rudbeckia*, but it is common to see in this Species more than thirty. Nor are they confined as he expresses it, to two regular Series; beside this general Cup there is to each of the Floscules a kind of small Cup, or regular supporting Rim from the Receptacle.

Immediately within the general Cup are placed the Rays; these are the Female Floscules, and within them rise the Cone of tubular Floscules, which have both Male and Female Organs, and are thence called Hermaphrodite.

The Rays are fourteen usually, sometimes more, rarely less. — LINNÆUS says twelve, but Nature usually exceeds that Account: they are very long, moderately broad; they are nip'd at the End, and they naturally hang down. Their Colour is a very strong and fine yellow, and they are uneven on the Surface, rib'd and furrow'd.

The Floscules at first appear in form of so many close green Buttons ranged in a regular Manner. The first that open are a Ring or Series just



Oval leaved Clematis

Alopecuroides Astragalus

Oriental Betony

Laciniated Rudbeckia

Siberian Larkspur

many Spiked Veronica

August. just above the Rays, and after this they burst out in Succession. When fully opened they are hollow, somewhat funnel-shaped, rib'd on the Outside, and divided into five Parts at the Rim.

From the Hollow of these Floscules burst five Filaments, with cylindrick Buttons; and after these have shewn themselves some Time, appears a simple Style from the Rudiment of the Seed, whose Head splits into two Parts, and these turn back.

When the Flowers are fallen appears a Head of naked Seeds: this is of a conic Form, and is supported by the common Cup.

The Seeds are fixed to a conic Receptacle, and separated by little Scales; and each is crowned by that small Margin which first appeared upon its Rudiment, as a Cup of the Floscule, and is now evidently dented in four Places. The Figure of each Seed is an oblong square.

The Student has been already acquainted, that the Coalescence of the Buttons is the Character of the *Syngenesious* Class, which includes the composite flowered Kinds: they form a kind of Cylinder in each Floscule of this Plant, and refer it evidently to that Place in the LINNÆAN System.

The Rays, or Female Floscules, rise from a Rudiment of a Seed, as the others; but this has

no Style, and these Rudiments are abortive.

The tubulous Flowers in the Disk only produce Seeds, and hence the Subdistinction under which this Plant stands in the LINNÆAN System, is that of *Polygamia Frustranea*.

Culture of this RUDBECKIA.

The Plant is a perennial, Native of *North America*, and lives very freely in the open Borders of our Gardens with little Trouble.

The Gardener is induced by this, as in many other Instances, to allow it too little: he neglects it because it will live in spite of his Neglect; but with due Care it will be much more beautiful.

The common Mould of the Garden very well supports it; and the parted Roots grow freely: but the Way to obtain fine Plants is to sow the Seeds.

This should be done early in Spring, on a Bed of light Mould: the Plants should be removed in Autumn into the Places where they are intended to flower, and they should be allowed a Yard clear Space about them.

In this Manner from each Root there will rise four or more Stalks; which together, will furnish for all the latter End of Summer, a Succession of very specious and very lasting Flowers.

5. SIBERIAN LARKSPUR.

Pl. 47.
Fig. 5.

This is another tall and specious Plant, sufficiently hardy to live in the common Borders of a Garden, and worth any degree of Care, though it requires very little.

The Writers on Plants have been long acquainted with it, though they have placed it much amiss in their Works.

The Gardener is to be told that this *Siberian Larkspur*, which he understands as a new Acquisition, was known to CLUSIUS, and to CASPAR BAUHINE.

The first of these calls it *Aconitum Lycoctonum flore delphinii Silesiaci*: Wolfs-bane with the Silesian Larkspur Flower; and the latter, *Aconitum caeruleum hirsutum flore consolide regalis*: blue hairy Aconite with a Larkspur Flower.—GERARD and PARKINSON have also named it, and with the rest, under the Addition of its having the Larkspur Flower.

LINNÆUS refers it to that Genus; for in the Flowers we are to trace the Characters of Genera; and these Writers should have known that whatsoever has a Larkspur Flower is a Larkspur.

He adds as the Distinction of the Species, *Nectariis diphyllis, labellis bifidis, apice barbatis foliis incis, caule erecto*: upright Larkspur with divided Leaves, and the Nectaria composed of two

N^o 47.

Leaves, the Lips split and bearded at the Ends. A Name amply distinguishing it from all the other Kinds, as it describes the peculiar Form of the Flower.

The Root is large, blackish, and hung with numerous dark soft Fibres.

The Stalk is six Foot high, ridged, tinged with purple, and a little hairy; hollow, and decorated with many Branches.

The Leaves are large, broad, and deeply divided into numerous Segments; and of a dusky green.

The Flowers crown the Tops of the Stalks, and all the Branches, and are of delicate purplish blue. They are disposed in long and thick set Spikes, and naturally stand horizontally.

There is no absolute Cup to the Flower; the Receptacle is naked at the Point of the Footstalk; but a little below there rise from the Footstalk two slender Points, which assist in supporting the Petals in their Place.

We have observed that where there is no Cup, Nature gives something usually in its Place. These purplish Points serve in that Manner here.

The Flower is composed of five Petals, unequal in Size, and unlike in Shape, but spreading regularly open.

7 C

The

August. The upper Petal is carried out behind into a kind of Horn, or Spur; long, tubular and obtuse.

The other four make the lower Part of the Flower, and they are nearly equal in Size, oval and obtuse.

In the Centre stands a most conspicuous Nectarium, divided so deeply into two Parts, that it appears formed of two Leaves; and running out behind the whole Length of the tubular Horn of the Flower in which it is enclosed, and whose Hollow it fills: from its Under-part, where it joins to the Receptacle of the Flower, rise two Lips, small at the Base, split at the Top, and brown; but elegantly fringed at the Points, and down the Neck, with golden crisped Hairs.

Under Cover of these Lips of the Nectarium rise numerous Filaments: they are short, broadest at the Base, curled, and crowned with small brown Buttons.

In the Centre of these are three oval Rudiments, crowned with Styles of the Length of the Filaments, with simple Heads which turn back.

The Student tracing those numerous Filaments to their Base, will find them inserted on the Receptacle. This with their Number, shews the Plant to be one of the *Polyandria*, and the three Styles refer it to the *Trigynia*. The Flowers are each succeeded by three Seed-vessels, with numerous angular Seeds.

As the Flower of the Monks-hood bears some external Resemblance to that of the *Larkspur*, and this Plant has been referred to that Genus by inaccurate Writers, it may be proper at once to imprint upon the Student's Mind the Distinction of those two Genera.

The Monks-hood has the upper Petal of the Flower arched, the *Larkspur* plain: and in the Monks-hood Flower are two simple crooked Nectaria, supported on little Footstalks, whereas in this the Nectarium runs out behind into a Horn.

Culture of this LARKSPUR.

It is a Native of *Siberia*, and many other Places; and every where appears a robust and

hardy Plant, tho' it does not obtain the full Stature we have allotted to it, unless by Culture. August.

The Roots encrease freely, and when parted in Autumn, there is no Difficulty in making them grow. But the Way to raise the Plant in Perfection is from Seed; and the Gardener by good Management may thus do himself much Credit, for he may produce a great deal of Variation in the Colour of the Flower.

Let the Seeds be saved from a robust Plant, and sown in the Middle of *April* upon a Bed of fresh and fine Pasture Mould, and in a Part of the Nursery which has some Shade.

When the Plants have some Strength, let them be thin'd, leaving only as many as it is intended to raise; and in Autumn let these be planted in very good Garden Mould. They will flower the next Year, and there will be some Variety of Colouring among the Flowers, purple, blue, and pale.

Let the finest coloured be marked for Seed, and leave but two or three Spikes upon the Plant to ripen them.

As these will be well supplied with Nourishment, they will be vigorous in their Growth; and they must be treated as the others.

In this Manner let the Gardener every other Year sow a fresh Parcel. He will be sure to have very fine Plants; and he will in four or five Sowings see an unexpected Variety.

Our Gardeners in this, as in many other Instances, shut the Door of Knowledge against themselves: while they encrease the Plant only from parted Roots, they can have only the same Flowers.

When a Number of select Roots have been thus produced, they must always be taken up in Autumn, and kept in due Compass: they must be planted in a new Part of the Garden; or have fresh Mould put into the Place where they grew before, and they will thus maintain their full original Perfection many Years, which otherwise they soon lose: but even thus they will in Time grow faint; and in this, as on all other Occasions, there should be repeated Sowings.

6. MANY SPIKED VERONICA.

Pl. 47.
Fig. 6. Few Plants deserve more than this a Place in a Collection of the curious Kind: 'tis by no means a Flower. The Aspect is that of a Weed, and in those Parts of the World where it is native, it is most perfectly such; but the Regularity of Growth, and Glory of its innumerable Flowers, never fail to attract the Eye even of the most incurious.

The Root is composed of numerous Fibres connected to a small Head.

The Stalk is round, firm, slender, but per-

fectly erect; of a pale green, and four Foot high.

The Leaves are very numerous and elegant; their Disposition is uncertain, but they are usually placed alternately on the main Stalk, and in Pairs upon the young Shoots.

They have short Footstalks, and their Colour is a fresh and elegant green: they are oblong, moderately broad, sharp pointed, and sharply indented at the Edges: their Form and Colour give them a great deal of Beauty, but their Position more:

August. more: they bend downward naturally, but this not from the Inflection in manner of such as flag from Heat, or want of Nourishment; but the Body of the Leaf bending, curls as it were downward, maintaining all that Aspect of Strength and Vigour which is natural to Plants in a perfect Condition of Health.

The Flowers are innumerable: they crown the Top of the main Stalk, and the Shoots which rise from the Bosoms of all the upper Leaves in extremely long and elegant Spikes. They are placed close together, and have very short Footstalks: their Colour is a delicate yet rich blue, with a considerable Tinge of purple.

It is not unusual to see ten, twelve, or more of these Side Shoots upon a vigorous Plant. Every one terminated by its long Spike of Flowers; the whole forming a vast Cone (as every single Spike does a small one) with the Tops of the several Spikes gradually ascending above one another, according to the Place of Inflection of their Stalks.

Each Flower is placed in its separate little Cup formed of one Piece, and divided at the Rim into four small pointed Segments.

The Body of the Flower is formed of a single Petal; tubular at the Base, and divided at the Rim into four oval and sharp pointed Segments, of which the lowest is narrower than the others.

In the Midst of the Flower are placed two Filaments; these turn a little upwards, and are terminated by oblong Buttons, and between them is a single small Style with a simple Head.

We usually see the Filaments, Style, and Buttons, of a Colour different from the Flower; but in this Plant they are often of the same fine blue with the Petals, and appear as a Part of the Body of the Flower.

This may at first View perhaps, perplex the Student who is seeking for them, to learn the Characters of the Plant; but it is a great Addition to the Beauty of the Flower; for by this Means one uniform and universal blue is spread over the Top of the Plant; and the Eye is pleased with the Particularity, though we do not conceive, unless by such an Examination, what it is which occasions it.

The two Filaments refer the Plant to the second Class in the LINNÆAN System, the *Dianthia*; and the single Style to the *Monogynia*.

Culture of this VERONICA.

It is a hardy perennial Plant which will live with little Culture, but it will not attain the full Vigour and Beauty we have described, unless some Care be allowed to it.

The Seeds ripen very well with us; and tho' the parted Roots will grow freely, the Gardener should remember that the best Way of propagating the Plant is by sowing.

If the Method by parting the Roots is used, no particular Care is required; they must be planted in Autumn, and should be allowed a rich and deep Mould.

The Seed sowed in *July* or *August* should be preserved with Care till the following Spring; and then sown in the Nursery, on a Bed of fresh Pasture Earth.

When the Plants appear they should be thin'd; and in *May* some of the most promising should be taken up, and set at eight Inches asunder in a second Bed: in the Beginning of *September* they should be planted out, where they are to remain, and should be allowed a Yard Distance.

The Ground must be kept clear from Weeds between them, and they must be frequently watered till they are well rooted; and the remaining Summer, while they are taking their Growth, the Scope they are allowed, and the frequent refreshing of the Ground, by breaking the Surface, and by watering well, give them the full Strength of their Nature: from one good Root there will rise eight or ten Stalks, and all will be well nourished, and covered at their Tops with Spikes of Flowers.

Every Autumn these Roots must be taken up, trim'd, and planted again in a fresh Part of the Garden, or at least in a new Parcel of Mould; and let it be watched which of them produce Flowers with the blue Buttons and Filaments.

This is a Degeneracy from the Nature and Use of those Parts; for they do not contain a true Farina, or impregnating Dust; nor do such Plants so well ripen Seeds, but it is an Effort of Nature toward doubling the Flower.

We have shewn on a former Occasion, in what Manner the Filaments and Buttons become altered in the first Approaches toward Doubleness in Flowers; and this is the Effort Nature makes the same Way in the present Plant.

'Tis easy to conceive how noble an Appearance the numerous Spikes of these Flowers must make when the Petals were increased; and something very near that may be done, by marking those Plants in which we see this Tendency to it; and favouring the Disposition.

If Seeds ripen perfectly upon such Plants, they should be saved with great Care, and sown under all possible Advantages, as we have directed for the raising other double Flowers; and beside attempting the Improvement in a new Progeny, the old Roots themselves should be treated with particular Attention. They should be allowed a richer Compost, and suffered to produce only a few Stalks, that those may be better nourished.

By this Means may be produced whole Spikes of Flowers without one coloured Button; and in the finest of them the Ends of the Filaments, and the Bodies of the Buttons, will be extended in Breadth till they resemble Petals, and the Flower will have great additional Beauty. To what farther Degree this Improvement may be carried is yet undetermined. All the Plants of this Number are now in Flower in *Lee* and *Kennedy's* Nursery at *Hammersmith*.

C H A P.

C H A P. II.

Care and Management of the Ground.

NOTHING adds so much Lustre to Beauty as perfect Cleanliness; 'tis seen in a Garden as well as on all other Occasions, and it is a Maxim to be regarded carefully at this Season. The Borders are full of Flowers, and all looks gay and rich; the Gardener sees the Reward of his long preceding Toil, therefore let him not fail to use every little Addition to set it before the Eye in its full Glory.

Let him begin by going round the Plants in Flower, trimming each with an unwearied Hand. If an irregular Shoot appears let him take it off: Nature will return him an equal Quantity in a better Place, and he will gain by what in the immediate Act seems Loss. If a decay'd Leaf be seen any where let it be taken off; and let no Flower remain which is past its full Glow of Beauty. We have given the Reason before.

As Birds will continue laying if her Eggs be remov'd, so the Plant will send out new Shoots for flowering when the first are taken off; but if these be left, they will ripen Seeds, which is Nature's ultimate End in all her Works; and as no more are needed, few will be produced; nor will those few be well nourished, while the great End of ripening Seeds is going on in other Parts of the Plant.

The flowering Plants being thus trimm'd, and kept in Order, let him go over the whole Ground between with a small Hoe. If he have observ'd our Cautions in the preceeding Weeks, there cannot be any great Growth of Weeds to destroy now; but this Operation will cut up the first Shoots, of whatever Kind the incessant Labour of Nature may have scattered there; and at the same Time it will give an Air of Cleanness and of Culture to the Ground: nor is the Benefit confined to these Articles. The Mould will be more disposed to receive and detain the Dews and Showers, by being thus broken, and the Plants will be seen with double Beauty because of the clear Space between.

After this Care the next is that of watering; and all that remains beside in regard to the flowering Plants is the Destruction of Insects.

How the Waterings are to be conducted we have shewn already; and the more particular the Gardiner is in that Respect, the better will be the succeeding Bloom.

As to the Insect Tribe they are as numerous in the Flower Garden at this Season as in any other Part of the Ground, and they will be as mischievous.

The Leaves are as useful and as necessary to

many flowering Plants as to Fruit Trees, and they are exposed to the same Ravage.

The Caterpillars are the most mischievous of all; and they are, with tolerable Attention, the most easily destroyed. They will discover themselves to be upon the Plants by the gnawn Parts of the Leaves; and as they have no better Way of hiding themselves than by keeping at the back Part of the Leaves, it requires no more Trouble than the turning them up, to find the Devourers.

When little Insects crowd upon the Tops or among the Buds, they must be attacked with Water strongly impregnated with Tobacco Stalks and Soot: this is destructive of the Insects without hurting the Plants; but there are some Kinds that are not affected by it. In this Case there is no Way but to cut off that Part of the Plant, and trust to Nature for a new Supply.

This is a Season at which there is nothing against a quick Growth but Want of Showers, and that the careful Gardiner can very well supply.

As soon as he has taken off so much of the Plant as was infected with the Vermin, let him break the Surface of the Mould all about it, and give a gentle watering: this let him repeat every Evening constantly; and let the Water be such as has stood all Day in the Sun. He will thus give Vigour to the Roots, and a new Shoot or more will come in the Place of that he was necessitated to remove. The Plant will flower later than otherwise, but this, far from a Disadvantage in the Summer Flowers, is often a Thing very desirable.

The cutting off the Part of the Plant which is covered with Insects, is right in another Respect, in that it prevents the Mischief from spreading to the neighbouring Plants; which if any of them are in a weakly State, it is otherwise very apt to do.

This is the Remedy for that very troublesome Malady of the Summer Plants; but a much better Method is to prevent it.

We have said before that Insects are found in general on the weakest Plants; and are the Effect of that Mischief they are supposed to cause.

It will be found true in this Instance: of the tender Annuals now subject to be infected with them, they will be seen universally on the weakest Plants. We have shewn how difficult it is to remedy the Mischief, therefore let the Gardiner provide in Time against it by good Culture of his Plants.

The Method of raising these tender Plants in Hot-Beds, and by Degrees removing them into the

August. the open Air, is very easy, and very well known; but 'tis practised in too careless and clumsy a Manner. To this is owing the ill State of the Plants; and to that the coming of these Insects.

Whoever looks into the common Garden at this Time, will see stunted Chinese Asters, and even the French Marygolds, weak, dragling, and half starved: In those Places where more Attention has been shewn them, they are in Proportion so much better: but we seldom see them in their due Perfection. Where they are weakest and worst, they are constantly most infected with Insects.

Let the Gardiner therefore, who sees the Effects of Want of Care this Season, guard against it in Time for the next, by bringing the Plants forward with due Care, allowing them as much Room as we have ordered, and which is much more than is commonly allotted in their several Beds; and finally when they are to be brought into the open Air, by opening a Hole sufficiently large, and disposing the Earth well about them. After this, frequent Waterings, and the Use of a Water that is of a due Temper are the great Articles.

I have seen Plants of all these Kinds stunted by Watering from a Pump, worse than by Neglect of Watering; and whenever Nature has received a Check, the Juices are vitiated, and the Insect Embryos hatch.

This general Care being taken, let our Gardiner look over such particular Growths, as require a separate Management.

The Layers of Carnations and Sweet Williams which were put early under the Mould, will by this Time be very forward; they must be water'd once in three Days, and the best Time is two Hours before Sun-set.

Often than this would keep the Ground too wet, but unless Showers prevent the Labour, thus often it should always be done.

Few are aware how much the Success of Layers depends upon keeping the Earth in a due and uniform Temper. To make it too wet at some Times, and leave it to be dried again at others, is to invite and promote the shooting of Fibres one Week, and another to leave them to be parched up and perish: This is the common and unartful Method, but 'tis easy to see how wrong; and to this Mismanagement is owing the Loss of many of the Layers in the tenderer Kinds; and the Poorness of a great Part of those which outlive the Mischief.

The great Art in this Kind of Culture is to secure the Layer in its Place; and to give that Degree of Moisture to the Mould, which will naturally make it strike Root; and continue the same Temper in it till those Fibres which have been so promoted to shoot, have attained Strength and Firmness.

The tender Shrubs which were inoculated last Month will require to have their Bandages now loosened, that the Sap may circulate freely.

Nº 47.

At the same Time there should be given a good free Watering, and this will add greatly to the Success of the Bud; for the more freely the Juices are thrown up toward it when it is thus far fixed, the more certainly it will be united to the Stock.

The firm Union of the two is the great Article of the Gardiner's Care; and this is a Period at which it is more in his Power to promote it than at any other.

These Articles are what insure the Success of Gardening; and these the practical People keep to themselves, even when they most plausibly affect to discover, for publick Benefit, the Secrets of their Art.

'Tis thus Gardening, under all the specious Pretences of teaching it, is continued in the Hands of the mean and ignorant; and this has stopped the Progress of the Art in England.

What we have learned from Experience, and seen practised by the most successful, we declare with Freedom; and the Gardener has thus an Opportunity of knowing the little manual Part; without which general Knowledge is of very limited Use.

The Layers of the finest Carnations will now be fit to take off. They must be planted in small Pots, one Layer in each, and the Mould being gathered up carefully about them, they must be watered, and set in a shady Place, till they have taken good Root.

Every other Evening the Watering must be repeated, and when the Plants are very well rooted, they must be placed in a Situation open to the Morning Sun, and where there is a more free Air.

In the Beginning of October they must be set up to the Rim in the Ground, and sheltered by a sloping Reed-hedge, as we have directed for other tender Kinds: or if the old Method be followed, of defending them by a Hot-Bed Frame, a great deal of Care must be taken to allow them Air at all Times when the Days are mild. There is no Difficulty in defending them this Way from Frosts; but if they are drawn up weak, the Mischief will never be well recovered.

The bulbous *Iris's* will now begin to fade in Leaf and Stalk, and the Gardener must take this Opportunity of removing them.

The withering of all that is above Ground shews the Roots to be in a State of Rest, and it is at that Time they bear to be taken up and removed to a new Place, or refreshed with new Compost.

The Opportunity must be seized now it is offered; for after a very short Time, the Roots send out their Fibres for the succeeding Year, and at the same Time the Bud for the next Flower is form'd, and takes its slow but regular increase: therefore if the Root be taken up, after this the Progress of Nature is impeded, and the Flower for the next Year is spoil'd.

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August. If the Roots have stood but a little beyond the proper Time, this is all that happens on the Removal: but if the Time have been suffered to elapse further, the Bud for flowering is destroyed by the Check of the Removal, and no Flowers are produced the next Year.

The Seedling *Polyanthus's* will be in a Condition to remove, and the same Method is to be observed which we directed for the Primrose and Cowslip Kinds on the same Occasion. They must be set into the new Mould with great Care, and the Surface well closed about the Roots: after this they must be watered once in two Days, and the Gardener must keep a careful Eye over them, to see they continue as planted, and have the Roots well covered, and the Mould closed about their Heads.

The Auriculas which have been shifted into

fresh Earth and shaded, must be watered from Time to Time, and the same Care taken that we have just directed for the last Kind, of keeping the Roots well covered, and the Mould regularly drawn about the Head.

The Season for planting the Hyacinth Tulip, and Anemone Roots, will soon come on, and every Thing should be prepared for it in Time.

The Beds will require to remain some Time to settle after they are made up; and even before this there should be a last turning of the Heap of Compost: This is the proper Time for it.

Let the several Parcels be very well dry'd, broke, and turned over; and all Lumps rak'd out: let them be thrown up not in single Heaps as at first, but in Ridges, and thus lie till the Time of making up the Beds.



S E C T. II.

The Care of the SEMINARY, for this Week.

LET a Piece of Ground under good Shade and Shelter be dug up this Week, and very well broke; and in this plant Slips of the double Rose Campion.

Let them be well buried in the Mould except their Tops, and as soon as the whole Quantity is planted, let them have a gentle Watering, and repeat it every Evening till they are perfectly well rooted.

As this Kind rarely ripens Seed, and is a very elegant and valuable Plant, every Method should be taken of propagating and increasing it: the common Way is by parting the Roots in *October*, and this affords a very good Supply, as the Root in these Kinds increases very fast; but this is an additional Method: it gives an Occasion of producing a Number of good Plants at a different Season; and the Increase of the Root is rather promoted than impeded by it.

If the Sun come at any Time of the Day upon the Bed where these Slips are planted, it must be kept off by a Reed-hedge, and the Plants thus shaded, shelter'd, and watered, will soon begin to root.

Toward the latter End of *September* they should be taken up, and each planted in a separate Pot. They should again be shaded and carefully watered till they are well fixed in the new Mould, and it will be very proper to take them up with a large Ball of the first Mould about them.

They should stand all Winter in a warm and well sheltered Place opposite the Morning Sun; and early in the following Spring they

should be removed with Care into larger Pots, shaking them out of the first with the whole Ball of Earth, trimming the Roots which hang on the Surface with Scissars, and giving them a good Watering. In these they will flower in great Perfection the succeeding Summer.

This Week let the Gardener mark out the Ground where he proposes to plant out his young flowering Shrubs, Forest, and Fruit Tree Stocks.

Let him begin now to prepare for them by trenching the Ground. Let it be dug deep, and broke fine; and by this Means it will be put in a Condition to receive the Rains and Dews with Advantage.

As the Trees which are planted in Nurseries are to be removed afterwards into other Places, they should by no means have too rich a Soil in this Place; for they would never come to any thing, if that into which they were removed, were to be poorer: as Dung is for this Reason forbidden in the Nursery, there is the more Occasion for giving the Soil in that Place all other Advantages.

Our Pupil has learned by this Time, that the two Articles which favour the Growth of Plants and Trees, are Richness and Freshness of the Ground: as the first is forbidden by this plain Reason, the other should be by all means encouraged.

A perfectly fresh Soil is that in which nothing has grown: and the Value and Advantage of this is very well known: the next Thing to an unexhausted

August. unexhausted Earth is a well refreshed one; and this is what we propose on the present Occasion.

The Rains, Dews, Winds, and Sun, mellow, enrich, break, and moulder the Particles of the Earth thus turned up loose to their Influence; and this is the Operation of Nature in reuniting, or refreshing the Soil: let it be allowed in the full Extent to the Earth in the Nursery, and nothing more will be required: the Way to do this is by trenching and turning up the Mould.

August. This is what Mr. TULL, the Philosophick Husbandman, means, by Tillage answering the Purpose of Dung.

If all that he has advanced is not true, there is enough of Fact for the present Purpose: and although the same Field will not by this Method bear for ever successive Crops of Wheat without Manure, the Ground of the Nursery will in reality be made by this Means only, fit to receive and support the several Kinds of Trees in perfect Order for their future Removals.



S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

EVERY Day let the Gardener repeat his Attendance and Care of the Fruit Trees: 'tis all that is required of him in this Part of the Ground, and the Effect will be of the greatest Consequence.

The Race of Insects are innumerable: they encrease quick, and presently over-run what is neglected: only what is well defended, and well watched, can escape them.

The Vials of Honey or Syrup for the Reception of Flies should be replenished every Day: every Morning and Evening the Gardener should look for Snails and Slugs; and in the full Sun for Caterpillars.

Let him observe the Fruit and the Leaves; and when they begin to be hurt, let him look the more carefully for the Destroyers.

If any Tree appear in worse Order than the others, let the Ground be turned up about the Roots, and watered; or if this do not appear sufficient, let a little of some of the light Composts which are well enriched, and have lain a long Time in the Air, be sprinkled over the Surface, and a good Watering be given to wash in the Virtue.

The Raspberry Beds will now require a particular Management, little regarded, or little understood by the Generality of Gardeners. They are in full Vigour; the Fruit is set upon them; and the Business is to ripen it well.

Let him remember what we have said on different Occasions, that a free Passage of Air all about Fruit, of whatever Kind, is the true and the only Way of ripening it well; and that at

the Season of ripening, a great deal of Nourishment is required, tho' Watering is prejudicial. Upon these two Points turns the Management of the Raspberry Plantation at this Time.

Let the Branches be placed in Order, distant from one another, and kept from dangling; a few Stakes will be very useful for this Purpose, and the Gardener should all the Time have in his Head the Construction of an Espalier Hedge.

He is not expected on this Occasion to practise the regular Method of making those Hedges; but their original Institution was of the same Nature with what is required here. The Boughs are to be kept free and clear from one another, and in a good Position. Where they are only straggling and irregular, this Method will reduce all to order; where they are too thick, the Gardener must not fail to cut away some of them: 'tis better to sacrifice a few of the Fruit than spoil the whole.

When the Shrubs are thus brought to order, let the Ground be dug up between the Rows, and the Mould broke very fine on the Surface. They will after this be seen to grow with new Vigour, and the Fruit will be of the true delicate Flavour.

The great Art is chusing the proper Time, and this, Observation must tell the Gardener; for Seasons vary so much, that no exact Rule can be laid down about it. The Art is to hit upon that Season when the Fruit is coming fast to Maturity, but is yet firm on the Branches.

August.

August.



S E C T I O N IV.

C H L O R I S, or the K I T C H E N - G A R D E N.

CHUSE a well sheltered Piece of the Ground for Spring Onions: this Week is the best Time in the whole Year for sowing of the Seeds. Let the Mould be made very fine, and the Seed thrown on pretty thick.

When the young Onions appear they may be thin'd where they rise in Clusters; and they must be kept well weeded, and from time to time refreshed by gentle Waterings.

At the Approach of Winter some Preparation should be made for sheltering the Bed in extream severe Weather by a Mat or Canvas. The Onion is not so tender as to give the Gardener a great deal of Trouble on this Head; but it will be proper to keep off the Effects of the most violent Frosts.

This Week it will also be proper to plant out some Lettuces to come in toward Autumn. A great deal will depend in this Matter upon the Choice of a Place; and this should now be selected with Care.

The Lettuces we are about to plant out will continue till the Frosts destroy them; therefore let the Gardener select a Place where they have least Power: a warm Border under a Wall, and defended by a Reed-hedge, if exposed from either End, will be the right Choice; and the Mould should be dug a full Spade deep, broke very fine, and the Lettuces allowed a Foot and half Distance.

They must be planted with great Care, and

watered every Evening till they are perfectly rooted; and afterwards once in three Days to promote their speedy Growth.

As they encrease in Bigness, the Ground must be weeded and broke between them; and when they come for Use, they should be carefully picked out in such manner as to leave the Ground free, and equal between the Remainder. Thus they will improve from the Time of the first Gathering.

The seedling Beds of Coleworts must be thin'd; the Plants that are taken up should not be thrown away, but removed into another Bed; and after this the Seed-bed must be weeded.

This must be repeated from Time to Time. The transplanted Seedlings must be carefully watered; and the Bed often refreshed in the same Manner.

It will be a great Advantage to the whole Growth, to bring them forward now, and this will be the most effectually done by frequent Waterings; for the Warmth of the Season, with that Assistance, will have great Effect.

The whole Ground must be kept weeded; and the Generality of the Crops will be greatly forwarded by these Waterings. The Weeds on Dung-hills, and waste Places near the Ground, should also be pulled up now to prevent the ripening of the Seeds.

E D E N :

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A

COMPLEAT BODY of GARDENING.

N U M B E R XLVIII.

For the third Week in *AUGUST*.

S E C T I O N I.

FLORA, or the PLEASURE-GARDEN.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. YELLOW HEMEROCALLIS.

August.
Pl. 48.
Fig. 1.

THIS is a very beautiful Flower, known to the Gardener familiarly, and described by all the Writers on Botany, though under different Names. CLUSIUS calls it, *Lilio asphodelus luteus*; and C. BAUHINE, *Lilium luteum Asphodeli radice*: the yellow Lilly Asphodel; others, *Lilium non bulbosum*. — LINNÆUS separates it with Reason from the Lillies; and calls the Genus *Hemerocallis*. To distinguish this Species, he adds, *Scapo ramoso, corollis monopetalis*: branched Hemerocallis, with Flowers of one Petal. The Division into Segments is deep, but the Name is accurate and just.

The Root is altogether unlike that of the Lillies; composed of numerous, oblong, tuberous Parts, with many Fibres. The Colour is yellowish, and the Taste sweetish.

The Leaves are long, hollowed, narrow, pointed at the End, lightly striated, and of a pale yet agreeable green.

The Stalk is slender but firm, two Foot high, of a pale green, and naked except for two or three leafy Films.

The Flowers are numerous and elegant. They are large, of a very delicate yellow, and of an extremely fragrant Scent.

Numb. XLVIII.

Each rises naked from the Footstalk, and is narrow at the Base; expanded to the Top, and cut very deeply into six Segments. The tubular Part at the Base is short, and the Segments turn back at their Ends.

In the Centre stand six Filaments, a little stooping, and of these the upper ones are shorter than the others: the Buttons are oblong and incumbent.

The Style which rises from a roundish furrowed Rudiment, is slender, simple, and crowned with a small Head.

The Student will see that the six Filaments refer the Plant to the *Hexandria* of LINNÆUS, and the single Style to the first Section of that Class, the *Monogynia*.

Our Gardeners Names for it are as various as those of the earlier Writers: all unartful; but all formed upon some of its Qualities. They call it the Day Lilly, from the short Duration of the Flowers; the Tuberosé Lilly, from the sweet Scent of the Flowers resembling the Tuberosé, and some the Yellow Tuberosé.

August.

August.

Culture of this HEMEROCALLIS.

The Plant is native of the northern Parts of *Europe*; it gilds the Meadows of *Bohemia*; and in *Hungary* perfumes the Air in some Places for many Miles. It loves a deep black Mould with moderate Moisture.

Hence the Gardener who acts upon the Principles of Reason, is to deduce the Method of its Culture. No artificial Heat can be needed for a Plant which naturally lives in so cold a Climate; nor can any Soil suit it so well as its native Meadow Earth; enriched, without altering its Quality. It is to be managed thus:

Mix together four Bushels of black Mould from under the Turf in a rich Meadow, two Bushels of River Mud, and one Bushel of old Cow Dung. Throw these together in a Heap in Autumn, and let them lie till the *October* following. Then chuse a Part of the Flower Garden where there comes little Sun, and where there is the Shade of some Trees.

Dig out the Mould two Spades deep, and throw into the Place first a Foot Depth of pure fresh Earth from a Meadow, and then this Compost. Level the Surface, draw Lines across and lengthwise, and a Foot and a half Distance, and in the Centre of each Square open a Hole.

The Plant must be propagated by Root: for those Kinds which increase at the Root so abundantly, rarely ripen Seeds.

In *October* let the old Roots be taken up and parted, and one good separated Root planted in each Hole. Cover them an Inch and half; and keep the Ground clear from Weeds: Nature will do the rest.

After this, every Autumn the Roots should be taken up, and reduced to a proper Quantity; and the Compost dug out, and its Place supply'd with a fresh Parcel.

This Compost which is taken away may be used for other Plants which require the same kind of Soil; for though it will not support the same Root again in that full Lustre we expect for these Flowers, it is not exhausted.

This may be the Practice of the Gardener also on many other Occasions: the Compost removed from the Bed of one Plant, may be used for another which requires the same kind of Soil: but I have found that on many Occasions it is absolutely necessary to remove the Earth in which a Plant has grown, and to give fresh, in order to keep it in Perfection.

This Particularity is not limited by Nature to Flowers, but reigns among the meanest Plants. Scordium, which is as hardy as any Herb we have, will not grow in any tolerable Condition, for a Continuance of Time, upon the same Ground.

2. GREAT RED CHEIRANTHUS.

Pl. 48.
Fig. 2.

The Gardener knows the Stock Julyflower too well to be misled about its Figure; but it is needful he be told LINNÆUS has given it the Name *Cheiranthus*.

That Author has in many Cases altered the Names of Plants boldly; those who have not entered into his Reasons have said arbitrarily; but to judge of his Motives, Men must take in the whole Compass of the Science: all lay before him when he made these Innovations; and to those who entertain the same comprehensive View they will be found just, and necessary.

Those who have less general Knowledge, owe his great Name the Reverence to believe, that has been needful which appears superfluous, and that right, the Reasons of which they do not comprehend.

There is no Writer on Plants, or on Gardening, who has not named this elegant Genus; fruitful of Varieties, and comprehending many distinct Species which afford them.

They have, in general, treated of the Plant under the Name *Leucoium*, with the Additions of *Sativum*, *duplex*, *purpureum*, *roseum*, and *violaceum*: the double Garden *Leucoium*, with purple, violet, or white Flowers. Our Gardeners name it the Stock *Julyflower*, or simply the Stock.

The *Latin* Name *Leucoium* has been used with

the Addition of *Bulbosum* for a very different Plant, and to that LINNÆUS also has assigned it: we know how vague and various a Sense the *English* Name Julyflower bears; and when the Gardener understands the Reason of the more modern Term *Cheiranthus*, he will judge that it ought to supplant the *English* as well as the old *Latin* one.

To this generical Name LINNÆUS adds as the Distinction of the single Species, to which the double Flower we describe here owes its Origin, *foliis lanceolatis, integerrimis, obtusis, incanis, siliquis apice truncatis, compressis, caule suffruticoso*: woody stalked Cheiranthus, with lanceolate, undivided, obtuse, hoary Leaves, and compressed Pods with abrupt Tops.

The Name is long, but the Species of Cheiranthus are numerous.

The Root is thick, woody, white, and hung with innumerable long Fibres.

The Stem is single, upright, woody, tough; of a whitish Colour, covered with a light Down, and half a Yard in Height. At the Top it divides into numerous Branches which throw themselves every Way with a wild, but not ungraceful Irregularity, and are of the Length of the main Stem.

The Leaves are oblong, undivided, broadest toward

August. toward the Middle, covered with a thick hoary Matter, and of a pale greyish green.

The Flowers are very numerous, and very beautiful: they cloath the extream Parts of all the Branches, and are large, double, of a rounded or rosy Form, and a very sweet Scent. Their Colour varies without Bound or Limitation.

In the State wherein we have represented the Plant, and in which the Flowers grow largest of all, and most regular, the Colour is a fine deep glowing red, properly a crimson, with some small Tinge of purple: but from this the Variation in seedling Plants runs into the deepest Violet, and thro' all the Degrees of Paleness into absolute white.

These are the simple Colours, but the Flowers are capable of an endless Variegation, by the mixing of two of these in the various Forms of Stripes, Spots, and Blotches.

The Gardener who considers the Varieties which there are in the Colour red, taking it from the palest fleshy Hue to the purple of the Violet, will know that there may be a vast Variety in the Disposition of those several Tincts together. The white is an Addition beyond all these, and it sets off all the various Dyes with an elegant Opposition.

These are the genuine Sources of Variety in the double and striped Stocks, and few Flowers exceed them in Elegance. The botanical Student must be referred for the Characters to a single Flower.

He will find this placed in a Cup composed of four Leaves, and of a flatted Form: the Leaves which form it are hollowed, upright, parallel, and convergent, and the two which stand outwards have a Prominence near the Base.

The Body of the Flower is in this simple State composed of four Petals: these are placed crosswise, and are broad and short, but they have very narrow Bases of the Length of the Cup.

In the Centre are placed six slender Filaments, they all stand parallel: four of them are of the Length of the Cup, and the two others somewhat shorter; these stand within the prominent Leaves of the Cup.

The Buttons are upright, split at the Base, and pointed, and turned back a little at the Top. On each Side the shorter Filaments are pressed by a nectariferous Gland.

In the Bottom of the Flower is placed the Rudiment of the Fruit: it is squared and edged, and equals the Filaments in Length.

The Style is very short and flatted: and it is crowned with an oblong Head, thick, permanent, divided into two Parts, and those turned back.

The Seed-vessel is a long Pod, with the Style and Head affixed to the End in their natural short Form.

The Student knows that when four of the Filaments in a Flower are regularly longer than the two others, the Class is characterised, not by the

Number, but by this Disproportion. The Plant is thus referred to the *Tetradynamia*.

The Subdistinctions of this Class we have observed before are founded on the Structure of the Seed-vessel, and this is by that referred to the *Siliquose* Kind.

Culture of the CHEIRANTHUS.

The innumerable Varieties of the *Cheiranthus*, or as it is called *Stock Julyflower*, all are produced from this single Species: they are seedling Varieties; and one Rule of Culture serves for the Production and Preservation of them all. As this is a very essential Article in the Flower Garden, we shall give it at large as Experience directs, and as the joint Testimony of those who have been most successful in raising this beautiful Flower, confirms.

The Plant is a Native of the warmer Parts of Europe, and never thrives so well as near the Sea. This is its original Condition of Growth: this the Gardener wholly neglects: but by a due Attention to this, and an Observance of the known Rules, the Plant will be raised to the most full Perfection.

The first Care will be the preparing a right Soil; and in this Article it is, the Source of Improvement lies: this therefore must be at once made of a due Quality, and adapted to the natural Condition.

Let a Compost be made of these Ingredients; a Cart Load of fine Pasture Earth from under the Turf, half a Load of Pond Mud, and four Bushels of large coarse Sand, with the same Quantity of Cow Dung. Mix these into a Heap at this Time of the Year, and sprinkle them with a Pail full of Sea Water; or if that cannot be had, use in its Place the same Quantity of Brine, and add a Bushel of Wood Soot.

This is to be exposed to the Air all Winter, and to be frequently turned; and once in the Time, when the Weather is frosty, half the Quantity of Brine or Sea Water that was used at first, must be thrown over it again.

This prepared and laid up, let the Gardener mark Plants for Seeds. If he have Correspondence with other Gardeners, he should save the Seed from Plants in their Ground; and the more remote the Place the better.

Let him select such single Stocks for Seed as are large, robust, well growing, and would naturally have a vast Multitude of Flowers; and such as have in some Flowers somewhat above the proper Number of Petals, five, six or more: this is the first Tendency in Nature to Doubleness; and this he should carefully watch for the farther Improvement.

Let the Plant which is thus marked ripen but a moderate Quantity of Pods, pulling off the other Flowers as they appear; but let all those which have more than the four Petals, be saved for the Seed.

Let the Ground be cleared for a Yard every Way

August. Way round this Plant, and well dug up at that Distance; and let the Surface be broke nearer the Stem. Every Evening let the Plant have a good Watering, and tie up the Stem to a firm Stake to prevent the rocking by Winds.

Let the Ends of all the Stalks on which the Seed is sowed be nip'd off; and if there be any decayed Leaves about the Plant, let them also be picked clean away. When the Pods are full grown cease the Watering. When the Seeds are hardened in them cut off the Pods, and lay them on a papered Shelf to dry. After a Fortnight shake out the Seeds; spread them also for some Days upon the Shelf to harden, and then tie them in Paper Bags, and hang them up for Winter.

In the first Week of the *April* following, prepare a Piece of Ground in the Seminary: let it be open to the South East, and defended from cold Winds.

Dig out the Mould three Quarters of a Spade deep, and fill up with the Compost: level the Surface, scatter on the Seeds; and sift over them a Quarter of an Inch of the same Mould.

When the Plants appear they must be thin'd where they rise too close, and after this they must have frequent Waterings.

No Seedlings are more in Danger from Insects than these; and various strange Methods have been used to preserve them. The most common Way is to sow among the Stock some Radish Seed. They who advise this say, the Intent is that the Flies may fasten upon the young Radish Leaves, of which they are fond, and leave the Stock Plants.

He who has been the Misleader of *English* Gardeners through the whole Course of their Profession, is Author of this Practice: how contradictory to good Sense all must see, who enter upon the Profession on Principles of Reason; and how mischievous in fact let all those say who have seen their Seedlings half devoured, and the other half destroyed by it.

It is true that the same Fly feeds upon the seedling Radish, and the seedling Stock; and true that it is fonder of the Radish than of the other; or than of any thing else: but who shall say that when the Radishes are devoured, or spoiled, it will not fall upon the other Plants, its natural Food, after them.

If a large Quantity of Radishes be sown, the young Stocks will be drawn up weak, and spoiled them; and if there be only a small Proportion, the Flies are invited to the Place by them; and when they are consumed, they will certainly fasten upon the others. Certainly the inviting those Insects to the Place, which there is the greatest Reason to fear, is the worst Policy that could be prescribed.

In the Place of this absurd Custom, let the Gardener who studies his Profession rationally, consider what it is that makes his seedling Stocks liable to the Mischief of these Insects, and he will know how to propose a reasonable Safeguard.

We have told him that all Plants are liable to Insects in Proportion as they are in a sickly State, and 'tis exactly so in this Instance. August.

The seedling Stocks require repeated Waterings: without these they soon fade: their Juices stagnate, and the Swarm of Devourers appears. This is the Cause, and the Remedy is easy. The young Plants must not be chilled, or overflowed with Water, but they must be well supplied with it. Therefore the Method is to give it them in moderate Quantity twice every Day. In this Management they set out with a vigorous Growth, and continue it without any Check, and I never once saw the Flies attack them when thus supported.

In the latter End of *May* let another Bed of Compost be made for them just by the first, but larger: the same Situation is proper; and the nearer the Beds are, the less Damage the Plants will get in the Removal.

Let the Surface of this new Bed be levelled, and Lines drawn upon it both Ways at five Inches Distance.

In the Centre of every Square set one of the Plants from the Seed-bed, and when all are in, give them a gentle Watering, shade them by a Reed-hedge, and repeat the Watering till they are perfectly rooted: after this let them be constantly weeded and watered once in three Days till the End of *August*.

At that Time let a large Bed be made up for them in the Flower Garden, and let them be taken up in the Evening of a cloudy Day, and planted in it at two Foot Distance.

They must be watered and shaded till they have taken Root; and after that they will require only to be kept clear from Weeds, and now and then refreshed with Water in common with the other Plants.

They will flower the next Year, and there will be among them several common single Kinds; some single of better Colours, and with more than the common Number of Petals; and several very fine double ones.

The ordinary Kinds must be pulled up as soon as the Flowers open: this will give more room to the others: the select and fine single Kinds must be marked for Seed; and the fine double ones managed with all Care to promote the Fullness and Beauty of their Flowers.

The Seeds should be saved from the finest single Kinds as directed before, and sown in the same Manner for a Supply: the Plants never flower so strong, or so well as the first Season; and it is best to depend upon Seeds for an annual Store.

The Seeds saved from these Plants will not fail to produce the Gardener many double and very fine Flowers, but the best Method is to exchange them annually with some Person of Integrity at a Distance. This Sort of Intercourse is easy, for it serves the Purposes of both Parties.

The finest Flowers may be propagated by planting Slips or Cuttings of the Plant: but they never

August. never thrive so well, nor flower so strong, as the same Kind raised from Seed; and where there is a good Quantity of the Seed sown, there is no Fear of having enough of the double Flower.

This is the Management of the common

double Stock, and all its Varieties: there are August. besides this some of a shorter Growth, which must be managed accordingly. Of these we shall speak in their Place on a succeeding Occasion.

3. ORANGE HAWKWEED.

Pl. 48. This is a Plant very common in our Gardens, and by its Singularity very well deserving to retain its Place there: the old Authors have all described it; but under different Names.

Fig. 3.

The *Hawkweeds* were easily known, and this appears so plainly to belong to them, that one would wonder it should at any Time have been refer'd to any other Genus; but we find the Generality calling it *Pelofella major*, and *Auricula muris Hispanica*: great Mouse-ear, and Spanish Mouse-ear.

Our Gardiners have been from this led to call it *Golden Mouse-ear*, and they have a cant Name for it also which has been in Use more than a hundred Years, *Grim the Collier*. LINNÆUS refers it to the *Hawkweeds*, and distinguishes it by the Addition of *Hieracium, Foliis integris caule subnudo simplicissimo piloso corymbifero*: entire leav'd Hawkweed, with a hairy, simple, corymbiferous Stalk, with scarce any Leaves.

Those who have before refer'd it to the Hawkweed kind, have distinguished it by the Name *Hortense*, *Garden Hawkweed*, and they have added tho' in odd Terms, the Colour of the Flower. C. BAUHINE says, *Floribus atro-purpureascentibus*: with blackish, purple Flowers: but their Colour is a very strong Orange Scarlet.

The Root is oblong; purplish at the Head, white below, and hung with many thick Fibres: besides these it sends out every Way a Kind of Tendrils, which take Root again at their Ends, and spread and propagate it abundantly.

The Leaves are numerous and large: their Colour is a deep, blackish green, and they are covered with firm and stiff whitish Hairs; they are oblong, undivided, and of moderate Breadth.

The Stalk is simple, upright, round, and almost naked; a single, small Leaf sometimes adheres to it, rarely more: its Colour is a paler green than that of the Leaves, and it is covered with the same Kind of Hairyness: it divides into no Branches, but at the Top spreads out into a tufted Head of Flowers. The Bottoms of the Hairs, which cover the Stalk, are black, and they appear at a Distance as so many black Spots upon its Surface: the Height of the Stalk is a Foot and a half, and the Crown of Flowers at its Summit is often five Inches in Diameter, but where there are fewer of them they are finer.

Each Flower is surrounded by a rough, blackish Cup, and is itself rounded, radiated, N° 48.

and of a very fine Orange Colour; or somewhat redder than what we exactly mean by that Word.

One Flower always shews itself first upon the Plant, and passes through its State of Perfection, before the others open. This is the most perfect and most beautiful: from this the Gardiner should save Seeds; and in this the Botanist should search the Characters of the Plant.

He will find the Cup thick, and composed of many narrow and unequal Scales plac'd lengthways and incumbent.

In this stands the general Flower, which is composed of many Floscules, laid in a regular Manner one over another, and all of the same Structure.

Each Floscule is form'd of a single Petal, and is flat, narrow, and when perfect, cut in five Places at the End.

To each of these Floscules belong the male and female Parts of Impregnation; the male Parts are five very short Filaments, with oblong and tubulated Buttons, growing together in Form of a Cylinder.

The Style is simple, of the Length of the Filaments, and has a double Head, the two Parts of which are equal; this rises from the Rudiment of the Seed, which, when it ripens, is winged with Down.

The Student knows that in this Case the Coalescence of the Buttons marks the Class of the Plant: it is one of the Syngenesia. He has seen in many Instances, that the Flowers in the Plants of that Class are composed of tubular Floscules in the Disk, and a Verge of Rays of the flat or ligulated Kind: this is one of those in which all the Floscules are ligulated; and these Flowers are called imbricated, from the Floscules lying one over another in the Manner of Tiles.

The Sub-divisions of the Syngenesious Plants are formed upon the Manner of Impregnation: in this it is equal; for the Floscules have each the male and female Parts perfect, and all ripen Seeds; therefore what one does for another, is returned in the same Manner.

The Buttons impregnate their own Styles and those nearest them, and the Plant belongs to the *Syngenesia Polygamia æqualis*.

August.

Culture of this HAWKWEED.

It is frequent wild in the Southern Parts of *Europe*, nor is it confined to those: We see it flourish perfectly well on the Mountains of *Switzerland*. It loves a deep, mellow Soil, and requires very little Care in the Culture. No Compost suits it better than the common Mould of our Garden Borders, and the best Situation is where there is some Shade, and where there comes some Moisture.

It is to be raised from Seed; and the great Art, which none, tho' pointed out so obviously by Nature, have regarded, is to save that Seed only from that first Flower, which is so much superior to all the others.

Let the Seed be carefully saved from this; and dry'd upon a Shelf in a Sheet of Paper: for, if left loose, the least Motion of the Air will carry it away.

In the Beginning of *September* let this be sown upon a rich shaded Piece of Ground; and when the Plants come up let them be thinn'd, weeded, and watered. They will live through the Winter without Danger, and will flower in Perfection the succeeding Season. After this they will increase fast by the Root; but as the Propagation by Seed is so easy, it is best to do it every Year, for the Flowers never are so perfect as on the first blowing.

August.

4. The BEE FLOWER.

Pl. 48. We enter on the free Consideration of a Plant, whose Nature, Qualities, and Culture have been much misunderstood; and a proper Discussion of which will be, in more than this single Instance, of Use to the Gardener, as well as Information to the botanical Student.

Every one has heard of the *Bee Flower*, but its Management in a Garden is so little understood, that very few have seen the Plant; and wonderful as the Form of the Flowers appears, fewer yet, till LINNÆUS led the Way, have understood them.

That the Plant is worthy of a Place in the best Gardens, none will doubt; and we shall shew, from Practice and Experience, that altho' the raising it there requires a great deal of Care and Attention, yet when that Attention is rightly apply'd, it is as certain of Success as in other Flowers.

All who have written on Plants have named this vegetable Wonder; nor have they said too much of the Singularity, and perfect Mimickry of animal Nature in the Flower.

Fancy has been, in too many Cases, brought in to find imaginary Likenesses; but the Resemblance of a large humble Bee is so striking in this Flower, that where it has grown by a Road-Side, Men have been seen to strike at it with their Whips as they pass'd by, supposing it a real, living Insect.

The young Gardener must not be surprized, after we have named the Difficulty of its Culture, to hear of the Plant as a Native of our own Kingdom; many of the more singular Plants of *England* are worthy a Place in Gardens, but are more difficult to be raised there than the Natives of the *Indies*.

The Writers on Plants name two Kinds of the *Bee Flower*, both which they universally refer to the *Orchis* Kind; and they are distinguished in *English* by the Names of the *Bee*, and *Humble Bee Orchis*.

These are only Varieties of the same Plant, nor is the Variation limited within that Compass: according to the more or less favourable Circumstances of Growth the Flower will be larger or smaller, and there will be some Variation in Colouring: in Gardens, when well managed, it exceeds all that is seen wild: it swells to the full Size we have represented in the annexed Plate. So BESLER saw and figur'd it long since; and so we have this last Year seen it flower under our own Care.

The Names by which botanical Writers have called the Plant are *Orchis fuciflora*, and *Orchis fucum-referens*, *Orchis Melittias*, and *Orchis Sphegodes*, some *Testiculus Sphegodes*, and others *Satyrium fuciflorum*: all these Names, whether of *Greek* or *Latin* Origin, have the same general Meaning; they refer the Plant to the *Orchis* Kind, and express the Resemblance of a Bee in the Flower.

LINNÆUS has entered into this Subject more deeply. The numerous Plants, by preceding Writers comprehended under the general Name *Orchis*, he has divided into three Genera: 1. The *Orchis*, properly so called. 2. The *Satyrium*. 3. The *Ophrys*. These are kept separate by the following Particulars: In the *Orchis* there is a Spur or Horn to the Flower: this is the Nectarium running out behind. In the *Satyrium* the Nectarium is also placed behind, but it is not horn'd or pointed, but inflated and doubled so as to resemble a Scrotum: in the *Ophrys* the Nectarium is a dependent Lip, cut into two Parts, and denticulated on each Side: these comprehend, under the three distinct Heads, the Plants in general by others ranged together as *Orchis's*; and it will be found by this accurate Division, that the *Bee Flower* does not come under the *Orchis* but the *Ophrys* Kind. Besides these, some particular Plants have been denominated *Orchis's*, which having the Nectarium oval, swol'n, and furnish'd with an oval Lip, are referred to another Genus, the *Serapias*, properly

August. properly including the Helleborine; and others are placed with the *Arethusa* and *Cypripedium*, having Flowers altogether distinct, tho' called by less accurate Writers by this general Name.

For the farther ascertaining this Species, the *Bee Flower*, it is necessary to observe, that LINNÆUS does not allow it a distinct Name, or separate Existence from the *Fly Orchis* and some other Kinds.

Besides the two *Bee Orchis's*, we read in Authors of a greater and lesser *Fly Orchis*, a blue and a yellow *Fly Orchis*, a *Spider Orchis*, and the like. All these LINNÆUS refers to one Head, and considers them as Varieties from the Accidents of Growth, all referable to one common Species. This he calls the *Insectiferous Ophrys*; and he observes, that although the several Kinds have, to a superficial Eye, very evident Marks of Distinction, yet, on a more accurate View, they will be found all deduced from one original Stock, and, that different as their Forms appear, there is no Mark of absolute Separation.

On this Consideration he refers them all to one Species; and having, by the Character of the Nectarium, before removed this from the *Orchis* to the *Ophrys* Kind, he adds, as the Distinction of the Species, *Bulbis subrotundis, caule folioso, nectarii labio subquinque-lobo: Ophrys* with a leafy Stalk, and with the Lips of the Nectarium marked by five slight Divisions.

This is the proper Name of the *Bee Flower*, this will be found to separate it from all the other Species; and under this the Flies and Spiders, and BREYNIUS and MORISON's Monkey and Beetle Orchis, will be all comprehended. All those are therefore to be considered as accidental Changes; and although this may appear bold and arbitrary on the first Consideration, yet he who has seen what Culture effects upon the Flower in the present Instance, will be easily reconciled to the Determination.

The botanical Student will not think thus much misapplied in explaining the Nature of so singular a Plant, to whose Description we shall now proceed, and afterwards to its Culture.

The Root is composed of two roundish Bulbs, white, large, juicy, and of a pleasant, sweetish Taste.

The Leaves are numerous, oblong, moderately broad, of fresh green, undivided at the Edges, ribb'd lengthwise, and pointed. They grow in a various and uncertain Manner, some obliquely, some flat upon the Ground, and others rising with the Stalk, whose first Shoot appears very soon after them.

The Stalk is round, upright, and a Foot in Height, of a pale green, and juicy.

The Leaves are few upon it, and they stand irregularly, they are oblong, and rib'd as those from the Root.

The Flowers are placed at Distances one above another, and they are in the highest Degree conspicuous. They resemble in Form and Colouring

the great dark Humble Bee, so regularly, that one starts at the Sight, and cannot, without Recollection, imagine that they are real Flowers.

Let the Student understand, that wild as well as in the Garden there are various Appearances in them, Nature sporting in an unbounded Freedom; and let him also recollect there is more than one Kind of the Insect; when the Flower is in Perfection, if he will bring the commonest Kind of Humble Bee, which is the largest but one, to the Plant; and he will find the Resemblance strengthened, not hurt, by that close Comparison.

The Parts are these: the Rudiment of the Seed-vessel supports the Flower naked, for there is no Cup.

The Petals are oblong: they are five in Number, three larger, and two smaller; and the Nectarium, which forms a Kind of Lip, hangs down. This is the whole Flower. There rises with each an oblong, narrow, leafy Film; and it is in the Nectarium, that we see the Form and Colouring of the Bee: the Petals are purplish, and have each a Rib of green.

The Top of the Nectarium is also of a dusky Colour, not without some Tinge of purple. The Body of it, which hangs down, is rounded, hairy, and very much of the Shape and common Colour of the Body of a Humble Bee, dusky and blackish.

The Colour is of a different Tinct, as seen in various Lights, and has a velvety Appearance. Upon this ground Colour there are disposed several Streaks of a tawney yellow, which also shew themselves variously according to the Light; and there are some Lines of white also elegantly disposed, principally on the under Part, and toward the Head in the upper.

This is the most perfect State of the Flower; in this Condition we are sure to find it wild, where all Things favour; and to this State it may be brought in Gardens: neither are we to suppose because we see the Flower smaller, or the Colouring otherwise disposed, that the Species is distinct.

The Filaments are only two; they are fixed to the female Part, and are terminated by upright Buttons, which are defended by the inner Edge of the Nectarium.

The Rudiment of the Fruit which supports the Flower is twisted, the Style is single, and is fixed to the interior Edge of the Nectarium, and crowned with a small Head.

We have told the Student that when the Filaments grow to the Style or female Organ, this Situation, and not their Number, marks the Class of the Plant. This is by that Character refer'd to the Gynandria; and the Subdistinction to which it is to be refer'd is that of Diandria, established on the Number of those Filaments.

This is a classical Character on other Occasions, but where the Class is marked by the Disposition of the Filaments, their Number only makes a Subdistinction.

The Seed-vessel, which follows every Flower, is

August. is of an oblong, oval Form; obtuse, striated, form'd of three Valves, and marked with three Ribs: the Seeds are very minute and brown.

Culture of the BEE FLOWER.

The Plant is wild in all the temperate Parts of *Europe*, but it is no where common: for of Millions of the Seeds which the Winds scatter, scarce one falls where it can shoot.

It is found principally on the hollow Sides of old Gravel Pits, where there has been Time for a slight Covering of Grass; and sometimes in the loose Earth upon the Edges of Woods. In these latter Places the Flower is usually small; where there is less Moisture and more Sun it attains the due Perfection.

I have found it near *High Wickham*, and on the Edge of *Charlton Forest* in *Suffex*: and LINNÆUS's Opinion is extremely confirm'd on the Subject, by what occur'd in this latter Place.

The late Duke of *Richmond*, to whom I shew'd it there about sixteen Years ago, and with whom I afterwards annually visited the Place, shared the Astonishment with me of seeing the strange Uncertainty of the Flower.

We never failed to find some Plants of it there, though there were never many; six or eight perhaps scattered over a Spot of two hundred Yards square, where there was clear Ground, and some free Air as well as Shelter. It is certain that we sometimes found these Plants to be of the Kind called *Fly Orchis*'s, and at other Times of the true and genuine *Bee* Kind: this shews that these, however long understood as distinct Species, are no more than Varieties of the same Plant; and one Thing more which an unaltered Experience of several Seasons confirmed, was, that a rainy Year certainly shewed us the Flowers small, and of the *Fly* Kind; and a warmer and drier Season the *Bee* Flower in its proper Form.

The present Duke of *Portland*, to whom the Science of Botany has great Obligations, and whose Name would be often echo'd as its Patron, if he did not eclipse that Title by yet greater Qualities, preserves this Plant in great Perfection.

The Place is one of those old Gravel Pits where it delights to grow, and where Nature's Hand first scattered the light Seeds. That Nobleman has enclosed this Spot within the Limits of his Ground; and it flowers there annually with more Regularity, in Form, and Colouring, than it ever does in Places more exposed to the Uncertainty of the Seasons: I have observed it there many Years, and always fine; not of the largest or the deepest Kind, but very elegant and expressive.

From this which we see in Nature we must learn the great Lesson of its Culture. It may be raised on the Edges of Wildernesses, but it will there be liable to many Disadvantages: the true

Place is a Hollow in a dry Spot, well defended, and where the Surface may be covered with a slight Coat of Grass; not in Turfs, but scattered.

The Method should be this: When the Plants are in Flower, mark as many of the strongest and best as are intended to be taken into the Garden.

Chuse a Place for them that is open to the South East, and perfectly defended from cold Winds. Dig out the Mould two full Spades Depth, and bring into the Place as much of the Soil in which the Plant is growing as will fill up the Room of it.

Let this be taken up not only from the same Gravel Pit, but from the same Side of the Pit, and as near the Plants as may be done with Safety from disturbing their Roots.

Let this lie a Month to settle. By that Time the Stalks and Leaves of the Plants will be in a withered State.

Let the Gardener watch his Time when they are just faded, and then take up the Roots.

In this there must be a great deal of Care used. He is not to suppose he takes up all the Root of an *Orchis* who gets the double Bulb: the Fibres run to a great Depth, and spread a great Way; and unless these are brought up entire, and delivered uninjured to the new Soil, there is no Hope of succeeding.

The Method must be this. A cool Evening, when the Air is damp, must be chosen for the Purpose: the Gardener must dig round at the Distance of a Foot every Way from the Stem, and he must clear the Soil away full two Spades Depth.

A Hole of equal Diameter must be opened in the Bed, and the whole Ball must be taken up with the Root undisturbed in it, and let into the Hole unbroken. The Earth must be filled in to close up the Space, and a gentle Watering must be given in that Place, not near the Root.

Then some Hay-feed must be scattered upon the Surface, and all left to Nature.

The Grass must be suffered to grow moderately thick, and the Plant will rise as naturally among it as in the original Pit.

A little Grass-feed must be then scattered over the intermediate Space of the Border, between this first Root, and the others removed in the same Manner; and when the Grass appears it must be thin'd. No Part of the Bed must be left naked, nor must it any where grow too close. The original Root will flower; the Seeds will ripen, and all must then be left to Nature. They will fall among the Grass, and over the Border, and some will strike and produce new Plants.

This is the Method when the Plants grow wild near the Garden; but from greater Distances it must be brought without such Encumbrance. Such a Bed should be prepared: the Roots should be taken up in the same Manner when the Leaves

and



August. and Stalks are faded; and wrap'd up in some damp Moss.

When they come to the Place they must be planted immediately at four Inches Depth, and the Mould closed over them without pressing it down.

The Seeds should also in this Case be preserved from the wild Plants, and scatter'd over the

Ground: this will give a fair Chance for some August. Plants; the other is a Certainty. A grassy Piece of a Border will have an odd Appearance in a Flower Garden, but there is no other Way of procuring a Succession of the Plants. The Spot should be chosen in some Part that is out of sight in the general View of the Ground.

5. DOTTED CANNA.

Pl. 48. We have given in the first Number of this
Fig. 5. Work, an Account of one Species of *Canna*, or as the common Writers express it, *Cannacorus*: this is not less worthy the Attention of the Gardener. The Richness of Colouring in the Flower might very justly recommend that; and this the elegant Variegation.

The Authors who have lately written on Plants have all named it; they call it *Cannacorus flore luteo punctato*: *Cannacorus* with a yellow spotted Flower.

The Root is tuberous, irregular in shape, and hung with many Fibres.

The Leaves are very large, of a pale green, and oblong, but with a very considerable Breadth.

The Stalk is round, jointed, and a Yard high.

The Leaves on it resemble those from the Root, and are very large; lightly waved at the Edges, and pointed.

The Flowers are very elegant: they stand in a great Number at the Top of the Stalk, and are large, and of a delicate and fine gold yellow

spotted with scarlet:

Each has a little three-leaved Cup.

The Body of the Flower is formed of one Petal cut deeply into six Segments, one of which turns down.

In the Centre stands a single Filament resembling one of the Segments of the Flower; and a single Style grows to the Filament; and is also flattened, and crown'd with a narrow Head fixed sideways.

The single Filament and single Style shew the Plant to be one of the first Class in the LINNÆAN System, and one of its first Section, the *Monandria Monogynia*.

The Seed-vessel which succeeds the Flower is rounded and rough, and the Seeds are also round.

Culture of this CANNA.

The ready Way of propagating the Plant is by parting the Roots; but the Seeds ripen freely, and they grow with as much Ease.

This is greatly the preferable Method, and this we have given at large before.

6. CRIMSON BIZANTINE LILLY.

Pl. 48. This is one of the latest of the Lilly Kinds,
Fig. 6. and one of the most elegant. The Form of the Flowers is the same with that of the *Chalcedonian Lilly* we described before, but they are larger, and the Colour is most singular: a deep bloody Crimson.

We have acquainted the Gardener that Bigness or Colour are not to be consider'd as Marks of a specifick Distinction: he is therefore to understand this as a Variety only of that Kind before described; the Creature of successful Culture. And though many of the old Writers have distinguished it by peculiar Names, and particularly C. BAUHINE, under that of *Lilium purpureo sanguineum flore reflexo*: the bloody purple reflex Lilly: he must refer it to the original *Chalcedonian* Kind, which we have before told him LINNÆUS calls *Lilium foliis sparsis lanceolatis, floribus*
Nº 48.

reflexis corollis revolutis: lanceolate and scattered leaved Lilly, with the Flowers hanging down, and the Petals turning up again.

The Root is a large scaly Bulb, of a pale Colour, white, with some Tinge of yellowish.

The Stalk is round, rib'd, firm, upright, and of a pale green; not branched, and a Yard high.

The Leaves are very numerous; oblong, narrow, sharp pointed, and pale.

The Flowers are numerous, and very elegant; they hang down on slender Footstalks from the Top of the Plant, and the Segments all turn up again.

The Colour is a deep and glowing Crimson; sometimes simple, sometimes spotted with rising Dots of purple; in either case extremely elegant.

August. The Filaments are six as in the common Kind, and the Style is single; this refers the Plant to the *Hexandria Monogynia*, and in all other Respects it agrees also with the Structure of that Flower.

Its Culture requires no particular Direction: we have given at large that of the *Chalcedonian Lilly*; and from the Seeds of that, Plants of this robust Structure, will rise, and with these

crimson Flowers.

When one of them is obtained, the Propagation is easy by Off-sets; and they must be treated as in the other Kinds. The great Chance for the right Sort is from repeated Sowings, and those large. The Trouble is not great, and the Advantage in this, as in all other Kinds, is certain.

August.

C H A P. II.

The Care and Management of the Flower Garden.

WE have directed the taking off and potting of the Layers of Carnations, and the finer Kinds of Pinks and Sweet-williams in a preceding Number: that done, the Gardener is to look to those of an inferior Kind, which are intended for the open Borders in the Flower Garden. These will now be enough rooted to remove with Safety; and they may be either planted in the Borders, or in a Bed purposely dug in the Nursery: it is equal which; for they are to be removed again at Autumn. The more regular Method is to plant them out in a Nursery-bed; but they make no ill Figure upon the Borders, where there is now room enough; and they will stand the Winter the better, the less Space they have to be removed afterwards.

In this Method of planting them at once in the Borders, they will only need to be taken up and put in again when the Beds are dug up in October.

In this case they strike root again immediately; and having no Check, they will flower much better the next Season.

This is a very good Season for removing the Roots of Lillies. Their Flowers in general are

past, and the Stalks and Leaves faded; they will not bear to be kept long out of the Ground; and they must now be just taken up, cleaned, and planted again in fresh Mould.

It is high Time the Martagons and Crown Imperials were in their fresh Beds again: indeed if it have been neglected so long, 'tis better to let them remain where they are; for they will flower very weakly and ill, if taken up after they have formed the Bud, and begun to shoot again.

The Annuals in Pots will require frequent Waterings; and it will now be time for the Gardener to mark those he intends for Seed.

These must not be suffer'd to exhaust themselves by too many Flowers: they must be placed in a warm Spot, and removed under Shelter every Evening.

The Practice at this Time where there are Stoves, is to preserve some of the finer and tenderer Kinds in them for Seed; but this Way the Plants want Air, and without that the Seeds will never become perfect.

The Method here directed is preferable: they will by this Means never fail to ripen Seeds, if they have been duly forwarded in Spring, and they will produce it in the highest Perfection.

S E C T. II.

The Care of the SEMINARY, for this Week.

PREPARE Beds for the several Kinds of Flowers which we have directed to be rais'd in the open Ground in the Nursery; from due Quantities of the proper Composts.

We have directed the making of these in treating of the particular Plants; and the longer they have lain in the Heap from the Time of their being first mix'd, the better.

The Method of using them is to be the same in all Respects; and upon the due Choice of the Place, and Management of the Ground now, will in a great measure depend the Success.

Let a large Quarter of the Seminary be selected for this Purpose: let it be open to the South East, defended from the North by a good Fence, and shelter'd moderately from the Noon-day Sun.

Let

August.

Let the Gardener divide it into as many Beds as he proposes to raise Kinds of Plants; and let these be three Foot and a half broad, with small Alleys between; and as long as will fit them for receiving the Seeds.

Let the Earth in each Bed be dug away half a Spade's Depth; and when this is removed, let the Bottom be very well broke up with a Pick-axe, and raked smooth, drawing off all large Stones and Clods. Then mark the first Bed by a number'd Stick fixed down firmly, and bring in the Compost for the Plant intended there to be raised. Let this rise two Inches above the Level of the Alley, and rake it smooth.

In this Manner make up every Bed; the marked Stake serving for a Notice of the Plant.

When all the Beds are made up, let them lie five Days to settle; then draw off as much from the Surface as will serve afterwards to cover the Seeds a Quarter of an Inch, and scatter them on: sift over them the Mould reserved for that Purpose; and lay a Piece of a Whitethorn Bush

upon each to keep off Mischief.

August.

After this let them all be managed in the same Manner. Let them be gently water'd if at any Time the Mould be too dry; and when the young Plants appear, let them be kept clear from Weeds, and at Times also water'd.

So far the general Practice is the same; what relates to each in particular we have directed, and shall farther under the particular Heads.

Here it will be proper to add one general Caution more, which is, that the Gardener sow a large Quantity of each Kind. A Bed of ten Foot long is as easily manag'd as one of five; and from the Quantity of Plants, he is to expect the great Advantages of Variety, and new Flowers.

All that will be farther required in the Seminary at this Season, is good weeding; and when necessary, Waterings: these are fatiguing, but if withheld when thoroughly wanted, all the former Care is lost.

S E C T. III.

P O M O N A, or the F R U I T - G A R D E N.

THIS Week it will be very proper for the Gardener to stir the Surface of the Mould about his Fruit Trees with the three-prong'd Fork.

We would not advise him to dig to any Depth, but only to break the Surface so far as will serve to destroy all Shoots of Weeds, and prepare the Mould for the Reception of Rains and Dews.

The Weeds must be raked off as soon as this is done; and unless the Season be very dry, nothing more will be required.

The Care of decoying, and looking after the larger and smaller Insects must be continued; and if in the Progress of this Attendance any Branch be again found out of its Place, it must be brought right and nailed down again; and if any of the ripening Fruit be left too defenceless, they must be shelter'd by Leaves from some other Tree.

This Week it will be proper in the same Manner once more to go over the Vines; both those against Walls, and such as are in the open Ground: there will be yet some useless and trailing Branches produced, and these must now be removed.

After this let all such as are loose from the Wall or Stakes be fasten'd; and when the whole

is reduced thus far to order, let the Gardener look attentively over the Condition of the Fruit. He knows what Sun, and what Degree of Shelter each Bunch requires; and let him now take Care, by removing Leaves where there are too many, and bringing in others from more distant Places where there are wanting, to give to every Part this due Shade and Sun.

When the Trees themselves are thus put in order, let the Ground be dug up about and between them: it will have been trampled in going among them for dressing; and Weeds will have begun to spring up among them, and about them upon the Borders.

This is a Season at which the Fruit requires most Nourishment; and it would be ill Management to leave the Trees in a Spot exhausted by Weeds, or hardened by Treadings. They want all the Nourishment the Ground can afford; and we have shewn on various Occasions, that it is a great deal less that will be supplied by the same Quantity when the Surface is hard; than when it is kept soft and broke by Culture. The Effects of Sun and Air fertilize it, and Dews and Rains are received more freely, and detained better upon it when broke; as also those Waterings which excessive Drought may render necessary.

August.

August.



S E C T I O N IV.

CHLORIS, or the KITCHEN-GARDEN.

Weeding and Watering will find the careful Gardener a great deal of Employment this Week in his Kitchen Ground. All the Nourishment the Soil can afford will be required for the forwarding of the Crops, and the more as there is less Rain.

In those Kinds where the Rows are distant, and the Spade can come between, nothing will answer like digging; and in that let the Gardener see that it is done effectually: that the Spade go its whole Depth, and that the Mould be very well broke.

As to the Weeds which are thrown off in the digging, they may be buried under the Mould, leaving a little Trench for that Purpose all the Way; for the Care before taken leaves no Opportunity of the perennial Kinds being there, and the Annual will never rise from underneath.

Cauliflowers Seed naturally succeed very well this Week, and a second sowing should be made about ten Days after.

The Plants rising from the first will be fit for the Hand Glass; and some of them may be planted under warm Walls: those from the second sowing will be proper to raise under Frames during the Winter. If the first run up to Seed in Spring these will supply the Place; and supposing all to succeed, it only gives two very good Crops.

This Week also dig up some warm Pieces of Ground, under Walls and Pales for Lettuce Seed. Let it be sown with a sparing Hand; and when the young Plants rise, let them be very well watered and weeded: the Cabbage and brown Dutch Lettuce will succeed very well in this Manner; and the Cos sometimes.

If the Winter prove severe, there is great Hazard of this last Lettuce in the open Ground, but it is worth the Chance of trying; and, in general, a Reed-hedge set sloping will preserve it.

Corn Sallet should be sown this Week for the Service of the succeeding Spring: it lies a great

while in the Ground; and takes the first Growth slowly.

If the Seed saved from the Plants of the present Year be kept till the succeeding Spring, it is a great Chance whether it succeeds; but if sown fresh in this Time of the Year, however long it lies in the Ground, the Gardener needs not entertain any Doubt of its coming up.

Fennel is a very useful Herb in the Kitchen Garden, and there is no Time of the Year when it succeeds better than at this Season of sowing.

Let the Gardener after this go over his Beds of the Onion Kind: the Leaves of the Schalots and Rocambole will decay, and this is his Notice for taking them up. This also is the Time for taking up of Garlick, which should be very carefully aired and hardened for keeping.

The Artichokes will require dressing, for they will now begin to shew their Fruit from the last Spring Plantation. A Number of Suckers will naturally be produced from the Sides of these healthful Plants; which, if not taken off, will impoverish and drain the Nourishment from the more perfect Fruit at the Tops of the Plants.

Let all these be taken off in Time; and when that is done, let the Weeds be destroyed: the best Way is by digging between the Rows with the Spade.

We have directed the planting them at such Distances that this can be done with Ease, and the Advantage of the Fruit will be very obvious.

This Week the Brocoli Plants which were removed five Weeks ago out of the Seed-bed should have their last Removal, and be set with Care in the Places where they are to remain: watering them duly till they have taken root.

Finally, this Week let the Gardener gather with Care such Seeds as are ripe, and spread them upon Mats to dry, turning them from time to time; and when they are dry in the Pods, rubbing them out, and spreading them once again to harden.

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COMPLEAT BODY OF GARDENING.

NUMBER XLIX.

For the last Week in *AUGUST*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. GOLDEN PERENNIAL MOTHMULLEIN.

August.

Pl. 49.
Fig. 1.

FEW *English* Plants exceed the common *Mothmullein*, an annual, and but of moderate Stature: this, which is a Native of the warmer Parts of *Europe*, has all its Elegance, with a perennial Root, and larger Growth. The earlier Writers have not been acquainted with it; nor does it stand ascertained distinctly in the latest.

MORISON calls it *Blattaria perennis folio verbosio flore amplo luteo*: perennial *Mothmullein* with a *Mullein* Leaf, and with large yellow Flowers.

LINNÆUS does not admit the Distinction of *Mullein* and *Mothmullein* into two Genera: he comprehends the *Blattaria* under the Head *Verbascum*, but he has not characterised this Species. It will be proper to call it *Verbascum foliis latis glabris amplexicaulibus perenne*: perennial *Mullein* with broad smooth Leaves encompassing the Stalk.

The Distinction of the *Blattaria* and *Verbascum* was always slightly founded, and ill understood. The *Roman* PLINY, calls *Blattaria* a Plant, which had great Resemblance of *Mullein*, but had smoother Leaves; whence it appears that he probably meant by *Blattaria*, what we call *Black*
Numb. XLIX.

Mullein: RAY, who preserves the Distinction; gives the Roundness of the Seed-vessel as the Character; but that is uncertain. The *Blattaria* and common *Mullein* are so distinguished, but the Difference in those is slight, and in some of the others it is entirely lost.

The Gardener will best understand the Distinction in the Size of the Flowers, those of the *Mothmulleins* being larger than those of the *Mulleins*; and in this respect not one of the Plants so called can be compared with the present.

The Root is long, thick, brown, and penetrating very deep, and hung with many Fibres.

The first Leaves are a Foot and half long, moderately broad; of a deep green, and waved and indented about the Edges.

The Stalk is round, firm, upright, and six Foot high: it is rib'd; of a pale green, often stained with purple, and is thick covered with Leaves.

These are oblong and large; broad at the Base, narrower all the way to the Point, irregularly indented at the Edges, and of a deep green; with broad pale Veins; smooth on the upper and under Side, and rising upwards in an acute Angle.

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August.

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August. The Flowers stand along the upper Part of the Stalk, forming a Spike of two Foot in Length; and whether open or in the Bud, they are extremely beautiful when full blown. They are of the Bigness of a half Crown, and their Colour is a perfect gold yellow; with a mixed yellow and purple Thrum in the Middle, and golden Buttons.

The unopened Flowers have something of a purplish Tinge upon the yellow, and stand in their green Cup as so many Lumps of Gold.

The Cup is formed of a single Piece, rounded, and swelled at the Base, and thence divided into five long Segments, broadest at the Base, sharp pointed; of a fine deep green, and edged with whitish Hairs. They are of a firm Substance, and stand a little expanded: they resemble in Miniature so many Aloe Leaves.

One Petal forms the Body of the Flower, but it is deeply cut into five Segments: the tubular Part is small, and firm; the Segments are broad, rounded at the Ends, and elegantly waved along the Edges.

In the Centre stand five purple Filaments, long, considerably thick, elegantly fringed at the Base; with long purple Hairs, and crowned at the Top with roundish Orange coloured Buttons.

The purple feathering of the Bases of these Filaments is very elegant, and forms the Tuft from which they seem to rise. The Filaments themselves are irregular in Length. The Heads of three of them seldom rising above the feathered Part; whereas the Bottoms of the others are supported on naked Footstalks, as it were, of equal Length with the bearded Part.

The Rudiment of the Seed-vessel lies in the Bottom of the Cup: the Style which rises from it is single, and a little longer than the Filaments, and the Head is an obtuse Knob.

The Seed-vessel which follows each Flower is roundish, and contains in two Cells numerous angulated Seeds.

The five Filaments shew the Plant to be one of the *Pentandria*, the fifth Class of LINNÆUS; and the single Style declares it one of the *Monogynia*.

Culture of this MOTHMULLEIN.

The Plant is a Native of *Spain* and *Italy*, and

of the South of *France*. It flourishes best in a deep and not over-rich Soil, where there is little Shade or Shelter.

This must be the *English* Gardeners Rule for its Culture. The Root being long and single, does not well bear parting to multiply the Plant; therefore the Method must be to raise it from Seed: nor does it any better bear Removal; for which Reason the Seeds must be sown, not in the Nursery, but where the Plants are to remain.

A Part of the Garden should be chosen which is sheltered from cold Winds; and a lean Compost brought into the Place.

Let the Mould be dug away full two Spades Depth, and the Bottom broke at that Depth with a Pick-axe.

Let a Mixture of three Parts dry Pasture Earth, and one Part of old Wood-pile Mould be thrown into the Place; and on this in the Beginning of *September* scatter the Seeds saved from a strong and flourishing Plant, and hardened with that Care we have directed on other Occasions.

Let a sixth of an Inch of the same Compost be sifted over them; and a Thorn Bush laid upon the Place to prevent Accidents, till the Plants are come up.

When it is seen which will be the finest and strongest, let the others be taken up, and as many of these left as can stand at two Foot Distance from one another.

These are never to be taken up, or removed. They must be watered at Times, and kept clear from Weeds; and when they rise to Stalk, they should be tied up two-thirds of their Length to firm Stakes: these will be hid among their numerous Leaves, and the Spike of Flowers will be much the longer and stronger for this Security.

The Roots are very lasting; but they do not flower so perfectly after about four Years; wherefore the Gardener should always make a Reserve for that Time.

The Seeds which should be suffered to fall the third Year, will produce many young Plants upon the Bed; and the finest of these should be saved in their Places at proper Distances, pulling up the other young Plants, and also the old ones.

2. DOUBLE TRACHELIUM.

Pl. 49.
Fig. 2.

This is a very elegant Effect of Culture on a native *English* Plant. We see by other Instances that there are wild Flowers in our Hedges which are admired when brought into the Garden, and that they are capable of the same Improvement for which we value those of remote Regions. This should be a Lesson to the curious Gardener to enlarge his Store by a new Method, by better observing Nature.

3

All the old Writers name this Plant; and tho' it grew neglected by Road Sides, covered with unregarded Dirt, yet in the single and common State, unaltered from the Hedge, it is an admired Plant in Gardens. In this single State they call it *Trachelium majus*, and *Trachelium asperum majus*; to this others add, *flore purpureo*: great rough Throatwort with purple Flowers.

C. BAUHINE rejecting the Distinction, which is

August. is indeed slight and frivolous between the *Throatwort* and *Bellflower*, calls this *Campanula foliis urticae*: the Nettle-leaved Bellflower: and many follow him.

LINNÆUS pays no more regard to the Distinction than it deserves. He ranks the *Trachelia* of those Authors with the *Campanula*, in one Genus; and he adds as the Distinction of the present Species, *caule angulato, foliis petiolatis, calycibus aliatis pedunculis trifidis*: square stalked Campanula, with Footstalks to the Leaves, with edged Cups, and trifid Footstalks to the Flowers.

The Distinction between *Trachelium* and *Campanula*, in those who have made it generical, is only in the Hairyness or Smoothness of the Leaves.

The Student very well knows this is no generical Character, and will justify at first Sight C. BAUHINE in that Sentiment which LINNÆUS has confirmed.

This Plant, which is the principal of those called Throatworts, is of a rough and forbidding Aspect till it blows; but then it immediately changes the wild Look, and puts on the Aspect of a Flower.

The Root is long, white, esculent, and well tasted, and is hung with many Fibres.

The Stalk is two Foot and a half high, square, upright, firm, though hollow; hairy, and of a pale green, tinged on the rising Edges with purple.

The Leaves stand frequent, and in an alternate Order. They are large, rough, and of a deep unpleasing green; naturally tinged with somewhat of brown, and often with purple. The lower ones have long Footstalks, those on the upper Part of the Stalk shorter: all are broad, sharp pointed, and sharply indented.

The Flowers are extremely numerous and elegant; they cover all the Tops of the Branches, rising from the Bosoms of the upper Leaves, three upon every Footstalk; the Footstalks being divided for that Purpose by Nature, each into three Parts.

In the plain and simple State of the Plant they are very large, bell-shaped, and of a delicate violet blue: but from Accidents of Growth and Nourishment, they will vary from this deep and perfect blue into many Degrees of purple, red, flesh colour, and absolute white.

In the Garden they have also all these Changes, but the most glorious Appearance they make there is in the double State we have represented in the annexed Figure.

In this specious Form they are subject to all the Variations of Colour we have named in regard to the single Kind. They will be violet coloured, purple, crimson, fleshy and white: in all Conditions they are elegant, but in none so fine as in the most natural State, which is the full and fine blue.

To find the Class and Place of the Plant in the LINNÆAN System, we must refer the Student to the simple State of the Flower. The Parts

are often irregular and disturbed in the double Kind. He will find the Cup formed of one Piece, divided into five pointed Segments, edged delicately with firm Hairs, and placed upon the Rudiment of the Capsule.

The Body of the Flower is formed of a single Petal; it is large, hollow, and unperforated at the Base. The Rim is divided into five Segments, which naturally expand.

In the Bottom of the Hollow are five convergent Valves; these cover the upper Parts of the Receptacle, and they are the Nectarium of the Flower.

The Filaments are five, they are very short and slender, and they rise from the Tops of the Valves which form the Nectarium: they are terminated by long Buttons of a compressed Form.

These surround a single long Style which rises from the Rudiment of the Seed-vessel, and is terminated by a three-parted Head, whose Segments turn back.

The five Filaments refer the Plant to the *Pentandria* of LINNÆUS, and the single Style to the *Monogynia*; the fifth Class of that Author, and its first Section.

Each Flower is followed by a rough Seed-vessel, containing numerous small Seeds.

Culture of this TRACHELIUM.

We have observed that the Plant is a Native of our own Country: no particular Shelter or Defence therefore can be required for it in Gardens. The great Care must be to follow Nature's Course in allowing it a fresh, but not rich Soil, and some Shelter.

The Root is perennial, and the Plant may be propagated by parting it in Autumn: but to raise all the Varieties, and shew them in Perfection, as in all other Cases, the true Method is to begin from the Seed.

This is of absolute Necessity in regard to the Generality of the *Campanula's*, for they are only biennial Plants. This, if the Seed be not suffered to ripen in so large a Quantity as to exhaust the Root, will live many Years, but 'tis never so fine as the first Season.

The Seeds must be sown in the Nursery, and once removed from the Seed-bed before they are brought into the Garden.

Let Seeds be saved with Care from double Flowers, if they ripen well, as they sometimes do; and also from some of the finest of the single flowered Plants. Let them be well hardened in, and out of the Pods; and finally, tied up in small Parcels, in Paper Bags, and hung in the free Air of the Seed Room during Winter.

In the Beginning of *October* let the following Compost be prepared: Mix a Load of fresh and dry Pasture Earth with three Bushels of Pond Mud; the same Quantity of Sand, and the same of Chalk: break the Chalk small, and mix it well with the rest, by turning the Heap once in six Weeks.

In

August. In the Beginning of *April* chuse a shady Part of the Nursery; and digging out the Mould for a small Space half Spade deep, fill up the Place with some of the Compost.

On this scatter the Seeds, and water the Bed if Showers should fail.

When the Plants come up thin them, and keep them weeded, and often watered. Seven Weeks after they first appear they must be transplanted. To this Purpose chuse a Spot more exposed than the first, yet not wholly destitute of Shelter; and digging up so much of it as will hold the Plants at five Inches Distance, put more of the Compost in the Place. Draw Lines for the regular Plantation, take up the Plants with Balls of Earth about the Roots, and set them carefully, closing the Mould about them at the Surface, and picking off dead Leaves.

Let this be done in the Evening of a cloudy Day; and let the Plants be constantly watered till they have taken root.

In this Bed they are to remain till the second

Week in *September*.

Then chuse a Spot in the Garden which has a good deal of Sun, but is sheltered from the mid-day Heat; and putting in the Compost, set the Plants with great Care at a Foot asunder. They must be watered and kept clear from Weeds, and they will flower in their highest Perfection.

The Plants should have more Distance than this will at first allow, but it will come in course. When they begin to shew their Flowers, those of an inferior Kind must be pulled up, and this will give the others due Distance. There will be all the Varieties we have mentioned from the succeeding Sowings, and these should be repeated every Year: but where there are Flowers finer than ordinary, they should be preserved as Perennials. For this Purpose the Stems must be cut down as soon as they have flowered, not leaving any Pod of Seed to ripen; and in Autumn they must be transplanted, and, if large enough, parted for farther Propagation.

3. NETTLE LEAVED SIBERIAN PHLOMIS.

Pl. 49.
Fig. 3.

We have set out with the Principle of recommending to the Gardener some Plants for Curiosity, with the more common Multitude raised for their Beauty. This is one of those Instances; a very Weed, when seen with a cursory Regard; but on a nearer View, full of Singularity and Elegance. It is one of the *Siberian* Acquisitions, and the old Writers had not Opportunities of knowing it.

BUXBAUM has described it under the Name of a Hedge Nettle, adding as its Distinction, *maxima foliis bormini*: great Galeopsis with clary Leaves: by the more accurate it has been invariably referred to the *Phlomis*. AMMAN calls it *Phlomis foliis urticae glabra*: the smooth Nettle leaved Phlomis. LINNÆUS more correctly, *Phlomis involucris hispida subulatis, foliis cordatis scabris, caule herbaceo*: Herbaceous Phlomis with hairy pointed Involucra, and rough heart-shaped Leaves.

The Plant when well nourished is seven Foot high, full of Branches, and covered with innumerable Flowers.

The Root is thick, irregular, pale, and hung with many Fibres.

The Stalk is square, solid, very firm, and naturally purple. It rises very erect, and sends up Branches from the Bosoms of all the Leaves.

To shew the Plant in its full Beauty, one Shoot should only be nourished from each Root, and this will be a kind of Pyramid, the Branches beginning from the Bottom, and shortening to the Top.

The Leaves are placed in Pairs: they are oblong, broad, sharp pointed, and indented deeply at the Edges. They are uneven on the Surface,

of a deep green on the upper Part, and paler, but smooth below.

The Flowers terminate all the Stalks and Branches in round Tufts: of which, one the most considerable, covers the Summit, and others surround the Stalk at every Joint for six, eight, or ten Stages.

Each Cluster is of the Bigness of a Walnut, rounded, but somewhat depressed, and is surrounded at the Base by an Involucrum of many narrow bristly Leaves.

The Cups form the Body of the Cluster, and are close set together, and green: the Flowers themselves are moderately large, of a very delicate pale crimson, and hairy. This is the general Aspect, but the Student will find them well deserving a more strict Attention.

The Cup is formed of a single Piece, tubular, long, and marked with five Ridges, waved at the Edge, and terminated by five pointed Segments, hairy like the Parts of the Involucrum.

The Flower is formed of one Petal; and is of the gaping Kind. The tubular Part is long, slender, and white.

The Body which shews itself out of the Cup is divided into two Lips. Of these the upper is large, arched, drawn down, and of an oval Form. The lower Lip is divided into three Parts, of which the middle one is largest, and most obtuse; and is a little ragged at the Verge.

The Colour of the upper Lip is that delicate Crimson we have described: the Edges of it are waved, and the whole covered with a fine downy white Substance. The lower Lip is paler, nearly white, but it is marked with fine delicate deep crimson



Golden perennial Moth Mullein



Various flower'd Coronilla



Double Trachelium



Purple centred Rudbeckia



Nettle leaved Siberian Phlox



Flat leaved Golden Sedum

August. crimfon Lines, three longer in the middle, two shorter at the Sides.

The Filaments are four; they are situated under Cover of the upper Lip, and two of them are longer than the others: they are terminated by oblong Buttons.

In the Centre of the Flower riles a fingle Style from a four parted Rudiment of a Fruit, this ripens into four diftinct Seeds, which lie without any Defence in the Bottom of the Cup.

When the Filaments in a Flower differ regularly in Length, that Difproportion is the Mark of the Clafs; the two longer Filaments refer this Plant to the *Didynamia*.

The Subdifinctions in that Clafs are founded on the Difpofition of the Seeds: They are naked in this Plant, and the Section to which it belongs is therefore that of the *Gymnospermia*.

Culture of this PHLOMIS.

It is a hardy, perennial rooted Plant, and will

live in almost any Soil or Situation; but the most favourable is a South east Expofure, and a mellow Earth. The Roots encrease fast, and it may be propagated by parting them in Autumn: the Seeds ripen very well with us, and grow freely, but there is no Advantage in raifing the Plant that Way, for there is no Variation in the Flower expected; and therefore there will be no Benefit from the fowing.

Let the Bed be dug deep, and about one third of Pond Mud mixed with the Mould. In this let the parted Roots be planted in the Beginning of *October*, allowing them a Yard Distance, and covering them up an Inch; they will require no farther Care but weeding and watering when they shoot up to Stalk: but they should every Autumn afterwards be taken up and reduced to a due Size; and the Border very thoroughly and deeply dug.

4. VARIOUS FLOWER'D CORONILLA.

Pl. 49.
Fig. 4.

This is another of the weedy Plants to which Curiofity rather than Beauty muft give a Place in the Garden: but although it have nothing of the Luftre of the nobler Flowers, the pleasing Irregularity of its Growth, the vast Quantity and long Succeffion of its Bloom, plead for its Admittance; and with thefe its eafy Culture.

The Generality of Authors have been acquainted with it though under various Names; C. BAUHINE calls it *Securidaca Dumetorum*: the Hatchet vetch of the Thickets; and CLUSIUS before him, and many after him, have called it by the fame Name. Others have called it *Colutea herbacea*; but all have added *Flore vario*, from the pretty Variety and Mixture of Colouring in the Flower. The later Writers have univerfally named it *Coronilla*; and LINNÆUS, who adopts that generical Term, adds to diftinguifh this Species, *Herbacea leguminibus ereclis teretribus torofis numerosis foliis glabris*: fmoth leav'd herbaceous Coronilla, with numerous, erect, rounded, and knotted Pods.

The Root is perennial, creeping, and hung with many Fibres; it has a white woody Pith, and is of a bitterifh Tafte.

The Stalk is round, weak, ridged, and often twifted; the Colour is a pale green: it keeps but poorly erect, and is loaded with many Branches.

The Leaves are placed alternately, they are pinnated, long, and of a pale green: the Pinnæ are oblong and obtufe, and eight or ten Pair ufually ftand on each Rib with an odd one at the End.

From the Bottoms of all the Leaves rife Footftalks, fupporting Clusters of Flowers. Thefe are ridged like the Stalk, and are three Inches

long; the Crown of Bloom, which terminates each, is an Inch in Diameter; it is compofed of numerous Flowers, fupported on flender Footftalks, all rifing from one Point at the Head of the general Stalk.

The Flowers are papilionaceous; and their various Colouring, fo much celebrated by the botanifcal Writers, confifts of a delicate crimfon and white. The Vexillum, or upper Petal, is of the moft delicate Crimfon, the Alæ and the Carina are white, with a very little Tinge of red; and the whole Flower not only varies in this Refpect paler, deeper, and more or lefs variegated upon feparate Plants, but on the fame Plant in its various Stages of Perfection or Decay.

The Botanift, examining the Flowers more accurately, will find each has its Cup form'd of one Piece fplit into two Parts, and fomewhat compreffed.

The Body of the Flower is compofed of the proper papilionaceous Parts, Vexillum, Alæ, and Carina. The Vexillum is heart-fhap'd, and turn'd back each Way at the Edges. The Alæ are oval, and of the Height of the Vexillum, obtufe, clos'd together upwards, and open below. The Carina is compreffed, and turned upwards.

The Filaments are ten, nine of thefe unite into a Body in the under Part, and the tenth is loofe. This the Student knows is the Character of the *Diadelphia* of LINNÆUS, and the Number of the Filaments places it under the *Decandria*: the Subdivifions in this Clafs being named from the Number of the Filaments, which is in others the claffical Character itfelf.

August

Culture of this CORONILLA.

The Plant is a Native of *Germany*, and most other Parts of *Europe*, where it lives in the worst Soils, and never thrives so well as when among Bushes.

Let this guide the Gardener in its Culture, in which more Care will be required to keep it within Bounds than to make it grow. Any un-

favourable Part of the Garden may be allotted for it; the best will be on the Side of some Wilderness Quarter; and it should be raised from Seed in the Place where it is to continue. August.

The Seeds ripen in *August*, and must be sown in *April*; when the Plants come up they should be thinn'd to two Foot Distance; and after this, every Year, taken up in *October*, and reduced to a due Compass, for otherwise they will quickly over-run a very large Extent of Ground.

5. PURPLE CENTERED RUDBECKIA.

Pl. 48. There is a great deal of Beauty as well as Singularity in this Plant; and its easy Culture farther recommends it.
Fig. 5.

The old Writers could not know it; for it is Native only of *America*; but all have spoke with great Praise of its Flower, who wrote since the Time when Science travelled into that new World. *PLUKENET* makes it a *Chrysanthemum*, and adds, *Helenii folio umbone grandiusculo*: Elecampane leav'd Chrysanthemum with a large Disk; and his Name, *MORISON* and *RAY* have copied. Under the Description of *DILLENII* it obtained the Name *Obeliscotheca*, with the Addition of *Integri-folia radio aureo umbone atrorubente*: Obeliscotheca with undivided Leaves and golden Rays surrounding a blackish purple Disk.

We have before told the Student, that *LINNAEUS* has given *RUDBECK*'s Name to the *Obeliscotheca*'s; he adds, as the Distinction of this Species, *Foliis indivisis spatulato-ovatis radii petalis emarginatis*: Rudbeckia with undivided Leaves, and the Rays nipp'd at the End. This Name is more accurate and scientifick; but that of *DILLENII* is more expressive.

The Root is thick, and hung with many Fibres.

The Leaves rise in great Numbers, and have long, hollowed Foot-stalks; they are oblong, moderately broad, wav'd at the Edges but very little, and obtuse; their Colour is a dusky green, and they are covered with short scattered Hairs, so stiff that they seem prickly. These Hairs are white, and the Ribs on the Leaves are pale.

The Stalks are numerous, and two Foot high, red toward the Bottom, naked two thirds of their Length, towards the Top; round, ridged, and covered with the same bristly Hairs. The Leaves on the lower part have no Footstalks; they resemble those from the Root, and they have the same rough Hairs.

At the Top of each Stalk stands one Flower very singular and very elegant; it is of the radiated Kind, but with a conspicuous and prominent Disk. The Rays are long, and of a gold yellow, the Disk is of a deep purple.

The general Cup is composed of numerous long Leaves, hairy as those of the rest of the Plant,

and disposed in two or more Series. The Rays are about fourteen in Number; they are long, narrow, of a fine gold Colour, and nipp'd at the End. The Floscules in the Disk are cut into five Segments at their Top, and they have five short Filaments, with convergent Buttons; forming a Cylinder.

The Coalescence of the Buttons in this Form shews the Plant to be one of the *Syngenesia*; and as the Seeds do not ripen under the Rays or female Flowers, it belongs to that Subdivision called *Polygamia frustranea*.

Culture of this RUDBECKIA.

The Plant is a Native of *Virginia*, and many other Parts of *America*, and is there found in open Places, where there is a great deal of Sun, and a deep, light Soil. With us it will live very well in the open Ground in a well chosen Spot; and ripen its Seeds.

This is an Article of great Importance; for though the Plant may be very well propagated from partings of the Root, it never flowers so well as the first Season; which is, when rightly managed, the second Year from the sowing.

Let the Gardener not grudge the little Attention which is needful to this Plant, since on that depends its Beauty.

If the Spot be ill chosen, it will scarce open its Flowers; but in a good Exposure they will succeed one another in a long Succession, and each of them will be of a Duration scarce to be equal'd in other Kinds, six or seven Weeks in full Beauty.

Let a Mixture be made of equal Parts, Pasture Mould and Pond Mud, add to this about one tenth Part of Lime, and throw it all in a Heap in Autumn.

Let a Plant which stands in a warm Exposure be marked for Seeds, and let the first Flower that opens be tied up to a Stick, for that Purpose, in two or three Places of the Stalk, that it may stand the whole Time of its Bloom undisturbed by Winds.

When the Seeds are hard in this, cut off the Head, lay it sideways on a paper'd Shelf, and turn it

August. it once in three Days; when the Seeds are thoroughly dry'd separate them, and spread them abroad to harden: after ten Days put them up in a paper Bag, and fasten it to a Line drawn across the Seed Room as the others. In the Spring following these are to be sown, and, after one Removal, brought into the Garden for flowering the next Year.

Let a Part of the Nursery be chosen open to the South East, and dig out the Mould half a Spade Depth in the middle of *April*. Fill up the Place with the Compost, and scatter on the Seeds: sift over them a quarter of an Inch of the same Mould; and in dry Weather water the Bed.

When the young Plants rise thin them, and

keep the Bed well weeded.

When they are two Months old, plant them out in another Bed of the same Compost, in the same Situation, at six Inches Distance; and in the latter End of *September* make up a small Bed for them in the Garden, with the same Compost; and plant them at two Foot Distance. Let them be taken up this Time with particular Care, and a good Ball of Earth preserved to the Roots; let them be watered till very well rooted; and if the Winter should be very severe; let them be defended by a Canvas Covering; drawn over some Hoops.

They will flower the next Season, and be a great Grace to the Garden all Summer.

August.

6. F L A T L E A V D G O L D E N S E D U M.

Pl. 48. This very elegant and singular Plant is one of those Additions to the Ornaments of Gardens, which we owe to the *Siberian* Botany.

The old Writers were unacquainted with it, and 'twas not till LINNÆUS read Nature in the Flower that the Plant was refer'd to its true Genus. AMMAN, to whom we owe the first Knowledge of the Plant, calls it, *Anacampteros flore flavo*: yellow Orpine. LINNÆUS, *Sedum foliis lanceolatis serratis planis, caule erecto cyma sessili terminali*: Upright Sedum, with flat, lanceolated, serrated Leaves, and with a Cluster of Flowers without a common Pedicle. This is a Name worthy the Correctness of LINNÆUS, but let the Student take Care it does not at the first Sight mislead him.

The Edges of the Leaves naturally rise, and the Leaves appear hollowed; the Term Flat is used in Distinction from those Leaves of the *Sedum* Kind, which are cylindrical.

The Root is thick and spreading, hard, and hung with many Fibres.

The Stalk is round, woody, and of a pale Colour, tinged with red in many Places, and most upon the younger Shoots.

The Leaves are plac'd alternate, and have no Footstalks; they easily fall off from the lower Part of the Plant, and leave Marks where they have stood: they are lanceolate, broadest toward the middle, serrated at the Edges, and obtuse at the End: they are of a fleshy Substance, and their Colour is of a very delicate fine green.

The Flowers crown the Tops of all the Branches, and make a very beautiful Appearance at the Summit of the Plant; they are starry, and of a fine golden yellow.

Each has its separate Cup, small, yellowish,

edg'd with red, and divided into five Segments, pointed at the Ends.

Five Petals constitute the Body of the Flower, and they are narrow pointed, and expanded like Rays from a Star: within stand five little Scales on the Outside of the Rudiments of the Seed-vessels; these are the Nectaria of the Flower.

The Filaments are ten; they are smallest at the Top, and crown'd with round Buttons.

The Rudiments are five, and each terminated by a slender Style with a small obtuse Head.

The Number of the Filaments and Styles shew that the Flower belongs to the *Decandria pentagynia* of LINNÆUS.

Culture of this SEDUM.

A Native of *Siberia* the Gardener may be assured will live in the open Air in our more temperate Climate, without any particular Trouble. Where this is native, it loves a mellow Soil, and some Shade; and this we must allow it in our Culture.

The best Management is to sow in a Nursery Bed, in *April*, the Seeds ripened the preceding Autumn. They must have a good, rich, but not heavy Soil, taken from any of the Heaps of Compost of that Character.

When the Plants have two Months Growth, they must be removed each with a good Ball of Earth, into the Places where they are to remain; and they will afterwards require only the common Care of weeding and watering in dry Weather.

The best Place is about the Edge of some Wilderiness Quarter; and the Mould should be removed, and one of the Composts, such as we have named, put in its Place.

All the Plants of this Number are now in Flower at *Lee and Kennedy's* Nursery near *Hammer Smith*.



SECTION II.

Of making a GARDEN.

THE Care and Management of every Part of the Ground as necessary for the present Week, the practical Student will find in the first Number of this Work. We have compleated the Circle of a Year; for 'twas in the last Week of the preceeding *August* we began; and we shall have now an Opportunity to consider the general Arrangement of a Garden, the Choice of the Ground, and its Disposition, with the Manner of original Plantation; as also to enter upon other the most essential and necessary Articles of the Profession.

As the Lessons to be given on this most important Head require the Compaſs of a few Sheets, we have taken this Opportunity without

exceeding our original Plan; by avoiding Repetition in those few Weeks where nothing new was required to be done: and we shall, in this and the succeeding Numbers, after the Accounts as usual of half a Dozen Plants in Season, compleat the practical Gardener's Instruction in the making a Garden; and deliver those Methods in particular and most useful Instances, which the Gardeners keep as their select and valu'd Secrets.

The Taste for Gardening is at this Time so universal, that beside the Improvement upon the false Manner of our Ancestors in the old, new ones will be continually now rising; and as the Season approaches for most rationally beginning this Work, it will be now Time to lay the Plan.



CHAP. I.

The Choice of the Ground.

THE Choice of Ground for a Garden, is the first Article, and of all others it demands most Care; because an Error in that Respect is never to be remedied.

In this Matter the same Rules will serve for a Piece of one Acre, or of ever so large Extent; and, in general, the same Idea of its Disposition: in *England* Ground is plentiful enough; and most of it is fertile, or capable of being made so; therefore let the Person, who is about to make a Garden, take the Advantage he has of chusing; and comprehend in his Mind all the Requisites and Advantages before he fixes upon a Spot.

Had we begun the Work with this Article, every Thing would have been new, and every Thing strange to the Reader; he would not have remembered afterwards what he could not understand; and the Lesson would have been given with little Advantage.

As we have now gone through the general Articles of Culture, we shall be understood in every Direction relating to the Ground; he will remember that a particular Situation, Soil, and Exposure are necessary, who knows why they are requisite; and a few Words will thus stand in the Place of Pages.

In the Choice of a Piece of Ground for a Garden, three Things are most essential to be

considered, the Situation, Aspect, or Exposure, and Soil.

In regard of Situation the three Kinds are an *Elevation*, a *Declivity*, or a *Plain*. By the Term *Elevation* the Gardener will understand we mean the Top of a Hill, by a *Declivity* its Side, or a *Descent*, and by a *Plain* a flat Piece of Ground. He very well knows that the Top of a Hill will be bleak, the Side temperate, and the Plain naturally damp. The Choice would be made at once, if no more Considerations occurred; but we must inform the Gardener of the whole.

The first Idea of Gardening, and that which prevails in many Countries at present, is the laying out a great Extent of Ground in something less than its natural Wildness: the Idea in this is vast, and tho' the Work be rude, it cannot but be pleasing.

In departing from this Taste, our Fathers run into the opposite Extream. Instead of having every Thing free, wild, and extensive; all was limited and confined. Four Walls bounded the Spot, and clip'd Yews took the Place of waving Oaks and branching Elms; a few ill-constructed Pavilions were the only Objects; and dirty Ponds the Water.

It is common in avoiding one Fault, to run into

August. into another: that was the Case in the first Improvement, as it was called, in Gardens; but we have now grown wiser; we have thrown down our nine Foot Walls, and opened the Prospect by ha-ha's; the Country is again become a Scene from the Garden, if not a Part of it.

We see some who have Taste enough to mix the Corn Field, and the wild Hedge; the flowery Meadow, and natural Thicket, in the very Limits of the Garden; and 'tis so happy in the Effect, that we may reasonably suppose more will imitate them.

All this let the Person who is about to make a Garden, take into his Mind; and chuse a Spot accordingly.

As wild Nature is to be a Part, or at least, is to come in View, let him be sure to fix upon a Place where Nature is agreeable.

We have not many bad Scenes in this happy Country; but let the Designer not only avoid these, but chuse among the good ones.

The Country round about must be pleasant that it may afford agreeable Prospects, and his chosen Piece of Ground must have some Elevation that he may view them.

The World does not furnish a Tree nobler than the *English Elm*; this will be seen in every Hedge, and its good Growth is a favourable Indication for the Soil.

The Hawthorn Hedge, and intermingled Crab; the brown Oak, and the elegant leaved Ash, all join to diversify the Scene in our most common Fences; and a Prospect from the most conspicuous Part of the intended Ground, over a cultivated Country disposed in Arable and Pasture Land, with these Fences, must always be agreeable. The good Growth of the Trees will also shew the general right Quality of the Soil.

Such should be the principal Prospect from the Ground: if the Spot have an Ascent, it will be easy to give different Views of it from various Openings; all agreeable; and if there be not the Convenience of opening immediately into any of the Fields from the Garden, yet the Appearance of them from a Distance is always easy; for when the Fence is not seen, the Field becomes a Part of the Garden.

Next to Beauty in the adjacent Country should be Variety; and this the Descent of the chosen Piece of Ground will best bring into View.

There is no Condition of Nature in which her Aspect is not pleasing when properly disposed and introduced. The Freshness of cultivated Nature is the most agreeable near Prospect; but

a barren Defart, a Heath, or Common, may be an agreeable distant Determination of a View; and a Hill, a Forest, or a River; are always Elegancies.

So much the Consideration of the adjacent Country should prevail in the fixing upon a Spot of Ground: and the great Use of a slight Declivity, or Side of a Hill is, that it will give Opportunities of commanding these Prospects without that Bleakness to which the Tops of high Grounds are always subject.

Another Advantage is, that Trees will stand well in these Situations, whereas on the Tops of Hills Winds would tear them from the Roots when new planted. On these Sides of Hills the Air also is always more temperate and healthful. The Air of low Grounds is usually damp, and the Tops of Hills too sharp.

This Choice of a Side of a Hill is the happy Medium, and it is thus one would wish to have a Garden situated, that whenever one steps into it, the Air shall be refreshing; and that, independent of that Beauty which is to arise from the Disposition of the Ground itself, and the Plantation; every Thing we see at more Distance shall be chearful and pleasing. This we obtain by chusing a Piece of gently rising Ground in the Midst of an agreeable and fruitful Country.

Thus far the Nature of the Ground supports the Preference, but many Things more are to be considered, and there must be great Limitation in the Degree of Ascent.

We have hitherto considered the Views and Wholesomeness of the Air; but a Garden is designed for walking, and a steep Ascent is difficult. Every Thing is intended for Pleasure, therefore it is a first Point that every Thing must be easy. A very gentle Declivity will give all the Advantages we have named, and more would be only troublesome to the Feet, and unpleasing to the Eye.

What should be preferred to all others is a continual but very small Ascent, which a little Labour may in different Places throw into an absolute Level; nor is there indeed any such Piece of Ground where Nature does not favour this in some Part of the Slope.

These Parts will favour that Variety we now with so just Taste admire in Gardens: naturally there will be Water at the Bottom; and a little Art will detain what runs down the Slope in various Parts for the Use of the several Divisions of the Garden; where it may be always ready, and always unseen.

August.

August.

C H A P. II.

Of the Aspect of a GARDEN.

WE have told the Reader that when he has settled in his Mind what Piece of Ground is from its Situation best for a Garden, there yet remain many Things to be considered.

We have recommended to him the Side of a Hill where the Ascent is gentle, and where the Country has Fertility and Variety; but he is to observe, that every Part of *England* affords him Choice of many such Spots, and he is to fix himself according to the other Advantages.

The first of these is the Aspect, or Exposure; by this the Gardener means the Quarter of the Heavens toward which the Ground is open.

There are sloping Grounds facing the East, West, North, and South; and every Subdistinction of the Compass, but of them all a South East is the fittest for a Garden.

This will be very well understood from the Conduct of the Work laid down in the preceding Pages under various Articles.

All Plants love the Morning Sun, but very

few of them can bear the full Blaze of Noon-day.

We advise under the various Articles of raising tender Plants, that they be placed in a Situation where they may have the Morning Sun; and in the Directions for keeping the finest Flowers in Bloom; the great Rule universally is to keep off the full mid-day Sun.

Such a Choice in point of Aspect as we have here directed, will give the whole Ground that Advantage, and by a just Plantation, of which we shall speak in a succeeding Chapter, all the Advantages of this Aspect will be perfectly enjoyed.

If the Spot thus chosen have a Defence of Trees, and rising Grounds to the North, it will be a farther Advantage; but the want of this is not to be considered as an unsurmountable Objection, because Trees may be soon planted, and there are Kinds that grow very quick to a due Bigness.



C H A P. III.

Of the SOIL.

THE two great Considerations of Situation and Aspect thus settled; the Designer of a Garden understanding that he is to chuse a Spot of easy Ascent, and open to the South East, it remains that he examine the Soil.

We have observed that a good Growth of Trees in the adjoining Hedges, is one excellent Rule of judging; and to this may be added the Aspect and Appearance of the Crops upon the Ground; and even of the Weeds. If every Thing appear vigorous in wild Nature, it is a Promise that culturing it will answer yet better.

This external Observation favouring, the next Thing is to examine the Soil by digging.

For this Purpose let a Hole be opened four Spades deep, and observe what is the Condition and Depth of the Vegetable Mould. The best for a Garden is a free, loose, hazel Earth: this is what we find under the Turf in the richest Pastures. We introduce it into the Composts of most Kinds in our Gardens, and it will be very happy if Nature afford it as the original Soil.

If the Mould be of this Kind, and neither

very dry, nor too moist, and continue such to the Depth of the fourth Spade, it is the most perfect that can be wished; if it be good for three Spades it will do very well: but if there be much less than this it is a reasonable Objection.

The Addition of Manure will encrease the Quantity as well as improve the Quality, but there must be a just Foundation in Nature for both.

If the Soil be good in its Kind, but shallow, and have a bad Bottom underneath, the deep rooted Growths will all fade and grow poor as soon as they have reached through the upper Coat of Mould.

To know with Certainty the Condition of the Ground in this respect, two or three other Holes must be opened as the first, but in different Places, so that the general Condition of the Ground may be known; for there are in the Dispositions of Soils, and especially on rising Grounds, Uncertainties and Variations beyond what could be supposed.

This Care and Examination must not be supposed

August. posed too much : the Choice of the Ground determines the Success of the Garden ; and 'tis to a Neglect on this Head, that we see Labour and Expence so often forfeited.

As we have named what is the best Condition of the natural Soil for a Garden, we must add, that the worst is Clay.

There are Methods of improving all Soils, this not excepted ; but 'tis almost an endless Labour to prepare a clayey Soil for Garden Borders ; and when all is done that can be, the Success is imperfect. We add rich Manures, and these mix well with loamy and hazely Soils, but they wash off from among the clayey.

'Tis true, that a Mixture of Sand and Pasture Mould will reduce Clay to a kind of Loam ; but when that is done 'tis imperfect. Clay is the worst Ingredient that can come into a Compost for a Flower Garden ; and in these Soils however mended, it will always be predominant. Gravelly Soils are poor, and those of the stony Kind at once poor and hot.

The Gardener should well understand this Distinction. Gravelly Soils are those full of Flints and Pebbles ; stony Soils are such as abound with Pieces of Lime-stone, Free, or other Quarry-stone. Sandy Soils are always barren, and always to be rejected in the Choice of a Piece of Ground for a Garden.

All the others are capable of an Improvement where Necessity throws the Designer of a Garden upon them.

The Clay will be brought to a Loam by Sand, and even the Sand by Clay ; and the gravelly and stony may be cleared of those useless Parts, and raised by better Soil : but this is tedious and expensive.

The true Choice must fall upon a Piece of Ground naturally suited to the Growth of Vegetables ; and then less Labour, less Charge, and less Uncertainty will be the Consequence.

When a Piece of Ground is found that has all

these Requisites, a gentle Descent, a South East Aspect, and a deep hazely Soil, let not any little Irregularities in the Surface deter the Designer of the Garden ; far from Blemishes, they may often be turned into the most considerable Beauties : at worst from the Nature of the Ground, they will be easily levelled ; or made at least tolerably regular.

The greater the Extent of the Ground the less are these Unevennesses to be regarded. The Hollows may be a proper Plantation, be made to resemble those rude Dells in the wild State of Things, than which Nature affords no Variety more pleasing.

An Oak rising from the Bottom of a Hollow, surrounded with Shrubs of humbler Growth, will form a very agreeable Object from those Walks in which the Feet are upon a Level with its topmost Branches. Nay, Genius, when it dares take its full Flights, will make these Caverns the most striking of all Objects.

Those who have seen *Goodwood*, know how much a Genius like the late Duke of *Richmond's* could make of such an Irregularity in the Ground : the Representation of Rocks rent by an Earthquake, and of Earth sunk by some great Catastrophe, presents itself to the astonished and pleased Imagination. This is the Sublime in Gardening ; which, as a late ingenious Author * has shewn on other Occasions, has its great Source in Terror.

This may serve as an Instance in the greater Kind ; and it will be easy to make these natural Defects in lesser Occasions, Objects of agreeable Variety.

One Rule on this Head is universal, the smaller the Piece of Ground the less it will admit these Irregularities. In general what is true of a great Garden, is applicable also to a little one ; but there must be Scope for the Introduction of these singular and great Parts.

CHAP. IV.

Of WATER.

THE Ground with all the Advantages we have described, is yet imperfect if there is not Water : he would be as absurd who should attempt to make a Garden without Water, as without Mould.

There is no Difference between Rock and absolute dry Defart, in respect of Vegetable Productions.

Water is requisite to the Beauty as well as essential to the Preservation and Management of Gardens ; and without entering into a frivolous

Detail of lesser Distinctions, let the Gardener consider it under three Kinds, Spring, River, and Pond.

Of these the last is most suited to the Service, and the second to the Decoration of Gardens. Spring Water is the hardest and coldest ; River Water is of a middle Quality, and Pond Water is the softest and warmest of all.

Spring Water from a Well is cold and hard in the most extream Degree ; as it has run farther, and spread more upon the Surface, it becomes

* Mr. Bourke on the Sublime and Beautiful.

August. comes more of the Nature of River Water; and that is softest and warmest where there is least Current.

The Water of Ponds is warmest when they are shallowest and most exposed. On these Principles the Gardener is to judge of Water in whatever State.

For Ornament, nothing can be so happy as the Choice of such a Piece of Ground as we have recommended, where there runs a small River at its Bottom.

If there be Springs in the higher Ground, their Course must be turned so as to decorate and refresh the several Parts of the Garden; and either for the detaining a Part of this, or for lodging and holding the Rain Water which runs from the higher Part of the Ground, Ponds must be dug in concealed Places, that there never may want a Supply.

If the Bottom will not hold it must be clayed, and there should be a larger Number of these Ponds in Proportion to the Extent of the Ground; or if it be small, one near the Centre.

The Success of Plantations, and the thriving Growth of almost all Kinds of Plants, depends on Watering in dry Seasons: the Designer should remember how often this will be necessary, and he should contrive in Time that the Labour of carrying it be not too great.

In regard to the ornamental Use of Water, nothing should be introduced for that Purpose, but the running: Coolness is one of the great Recommendations of a Garden, and nothing refreshes the Air, or gives the Appearance of Coolness, as well as the Reality, like running Water.

Whatever we admire most in Nature, we should endeavour to introduce in Gardens; and there is no Summer Sight so pleasing as a shallow and swift Rivulet polishing the Pebbles, and murmuring as it runs among them.

All standing Waters are apt to grow foul, and they favour the Production of Insects. They are useful, but they should be kept out of Sight, and as much as possible at a Distance from the more elegant Parts of the Garden: they look offensive when foul, and they taint the Air, and they promote Vermin.

The Coolness, the Freshness, and the flourishing Condition of a Garden depend in a very great Degree on Water; therefore never let the Place be fixed upon that wants this Advantage, though it have every other we have named: and, on the contrary, where there is the Benefit of a running Water, it will be worth while to combat Disadvantages in many other Respects. It is the Life and Soul of a Garden, its great Elegance, and great Ornament: Meditation is the Object in the

retired Visits to a Garden; and even those who have not Understandings exalted enough for that, have in its Place a musing Sedateness. Nothing so much disposes to this as one of these shallow Brooks: a Man may look on them and muse for Hours.

The Folly of Water-works is over, but that was a vain and frivolous Attempt of Art: this is Nature.

The Expence of those artificial Works was very great, and they were always out of order. If this natural Advantage can be obtained it lasts for ever.

If there be a Spring upon the higher Part of the Ground, this is the next Thing to a River at the Bottom: it may be thrown into many Forms, and it will be always useful as well as pleasing.

We shall close this essential Article of Choice of the Spot, with a few Observations on the Advantages and Disadvantages of other Situations, and the Uses to be made of this; and in the succeeding Chapters on this Head, shall attempt the Disposition upon rational Principles.

If there be not a Piece of Ground in the intended Part of the Country which has those Requisites we have named for the Perfection of a Garden, the Choice will fall upon high Grounds, or Flats, and the Determination is easy: on high Grounds, beside the Bleakness and Exposure, there is naturally a Want of Water; Winds have too much Power, and it is almost impossible to keep up a flourishing and healthy Aspect. For this, and for the Convenience of Approach, the Choice falls upon the plain or flat Country. There will be Water in Abundance, and a mild Air; every Thing will flourish; and the greatest Defect will be, that of Prospect.

Let the Gardener take Care that though he fix upon a flat Country, it be not on a low Part of it; for in the plainest Countries there is so much Choice.

Let him observe how high Floods rise, and take Care that he be not in danger of overflowing in Winter; and that the Soil be not too moist for the Reception of Plants of every Kind. Most Kinds require Watering at certain Times, but few will bear to have the Mould continually wet about their Roots.

If such a Disadvantage be found after the Choice has been made, and the Work begun, a Pond sunk in some proper Place may drain the rest, and be useful in the double Capacity of preventing Drought in Summer, and overflowing in Winter. In general, with due Regard to other Articles, the making of a Garden is easier and cheaper upon a plain or flat Piece of Ground; tho' upon a rising Spot it will be more elegant.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER L.

For the first Week in *SEPTEMBER*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. CILIATE LEAV'D RHODODENDRON.

Sept.
Pl. 49.
Fig. 1.

Curiosity and Beauty both plead for the Place this Shrub has for some Time held in the *Italian* Gardens, and which it deserves universally to hold in ours. It was known to the old Writers, tho' we are obliged to give it the new Name, theirs was so improper.

It is the Eighth *Chamae Cistus* of CLUSIUS; the *Chamaecistus hirsuta* of CASPAR, and the *Cistus pumila montis Baldia* of JOHN BAUHINE: by these Names of *Dwarf Cistus*, *hairy dwarf Cistus*, and *low Cistus of Mount baldus*, it was known to all who followed, till PLUKENET called it *Cistus Chamaerhododendros foliis*: Cistus with Leaves like Chamaerhododendros, and *Micheli Ledum foliis serpylli*: Mother of Thyme-leav'd Ledum. LINNÆUS refers it to his *Genus Rhododendron*, and adds as the Distinction of the Species, *Foliis ciliatis corollis rotatis*: ciliate leav'd Rhododendron with rotated Flowers.

It is a small but very elegant Shrub: the Root is woody, long, and spreading.

The Stem is covered with a brown Bark, tinged with purple; the Branches are very numerous, and their Bark is paler. They stand perfectly irregular, but in the whole make a pretty Appearance.

Numb. L.

The Leaves are cluster'd on the upper Parts of the Branches, and are very singular and elegant. They are small, of a lanceolate; but nearly oval Form, and of a very singular Colour; a brownish red or ferrugineous Hue, with very little green; shining and glossy on the Surface; and at the Edges surrounded with regular, stiff, dark Hairs, resembling Eyelashes.

PLUKENET adds to his Distinction of the Plant, with Leaves edged with Hairs in the Manner of Eyelashes, *Foliis cili instar pilosis*. LINNÆUS shortens the Term, and calls it *Ciliatis*. This Edge of stiff Hairs is what he on all Occasions expresses by that Term.

The Flowers are large and elegant, they are placed singly on long naked Footstalks, and their Colour is a very delicate Crimson; two generally rise from the Summit of every Branch, and their Footstalks wave or bend a little.

Each has its little Cup formed of one Leaf, divided deeply into five narrow Segments, and permanent.

The Body of the Flower is formed also of one Petal, deeply cut into five Segments, and of a rotated or wheel-like Form, hollowed in at the Base, where it is tubular a little Way, and ex-

7 L

panded

Sept.

Sept. panded at the Rim: the Segments are oval, waved, and pointed.

From the Base of the Flower are ten Filaments, long, slender, expanded, and crowned with oval Buttons. In the midst of these rises from a blunt Rudiment, marked with five Ridges, a slender Style, crowned with an obtuse Head.

The Seed-vessel, which follows, is marked with five Ridges, and divided into five Cells, in each of which are numerous minute Seeds. The ten Filaments refer the Plant to the *Decandria* of LINNÆUS, his tenth Class; and the single Style shews it one of the *Monogynia*.

Culture of this RHODODENDRON.

It is a Native of many of the Northern Parts of *Europe*, where it thrives best in a deep rich Soil with some Moisture, at the Foot of a Hill. A Plant native of so cold a Climate can demand no particular Care in our Gardens; only to make it succeed perfectly, the Place should have a little Shelter, and it should have frequent Waterings.

The best Compost for it is an equal Mixture of Garden Mould and Pond Mud; and the Propagation may either be by Cuttings, or by parting of the Roots, or from Seed. If the Roots be parted, it must be done in *September*, and they should not be broke too small.

The Method by cuttings is preferable to this, and is to be done in *May*. Sept.

The young Branches must be taken off for this Purpose in a cloudy Evening, and planted in a Bed of the Compost just directed, where they must be watered and shaded carefully till they have taken Root; but the best Way of all is to raise the Plants from Seeds. These ripen perfectly in our Gardens, and they always afford the handsomest Plants.

In the last Week of *March* let a Bed be made up with the Compost; and let Seeds, saved the last Season, be scattered over it pretty thick, and with a regular Hand: when the young Shoots appear they must be thin'd and water'd, and when they have six Weeks Growth they must be transplanted into another Bed of the same Compost; in which they are to stand till the following Autumn.

Then the finest are to be selected, and planted out in the Flower Garden, taking them up with a good Ball of Earth to the Roots, and observing to water them frequently till they are rooted well; after this they require no more than the common Care of weeding and watering, and they will flower in full Perfection.

The finest Plants are those of the second Year; and for this Reason, the Gardener should constantly save Seeds, and repeat the sowing for a new Stock.

2. The S T O R A X T R E E.

Pl. 50. Medicine has made this Tree famous, and had
Fig. 2. it less Beauty it would be preserved on Account of that fragrant Resin which it produces in the warmer Countries in great Abundance, and which is in constant and successful Use in the Shops: but were there no such Qualities, the elegant Growth of the Tree itself would not fail to recommend it to their Notice who preserve the curious Kinds.

The Resin has been long known in Medicine, and the Tree familiar among the botanical Writers. They call it *Styrax*, *Styrax Arbor*, and *Styrax folio mali cotonei*: the Storax Tree, and quince-leav'd Storax; but as it constitutes a Genus of which we know no other Species, there needs to be no Addition to the generical Name. LINNÆUS preserves this, and calls it simply, *Styrax*.

It is a Tree of moderate Growth, robust, and full of Branches. The Bark is pale, the Wood firm, and very finely scented.

The Leaves are large and numerous, and are disposed with perfect Irregularity upon the Branches; they are broad, oval, waved at the Edges, pointed at the End; of a delicate fresh green on the upper Side, and grey or whitish underneath.

The Flowers are numerous, large, white, and

very fragrant; they have an Aspect of the Orange Flower, and they grow several together, as on those Trees hanging from all the young Shoots.

Each Flower has its small Cup formed of one Piece, Cylindric at the Base, and indented in five Places at the Rim.

The Body of the Flower is formed of a single Petal, tubular at the Base, expanding to the Verge, and divided deeply into five long, lanceolate, and obtuse Segments: from the tubular Part of the Flower, near the Base, rise twelve or more Filaments, which have a Tendency to unite into several Clusters at their Bottoms: they are upright, circularly arrang'd, and crowned with oblong, erect Buttons.

From a roundish Rudiment of a Fruit placed beneath, there rises a single Style of the Length of the Filaments, terminated by a blunt Head. The Rudiment ripens into a coated Fruit or Drupe, of a roundish Form, and containing in one Cell two roundish Kernels, convex on one Side, flat on the other, and pointed.

We have had Occasion to observe in a preceding Work, that excellent as LINNÆUS is in his Characters of Genera, and distinctive Names of Species, his classical Distribution is founded on Accidents

Sept. Accidents too flight, and too uncertain. It appears in this Instance: the *Styrax* is, by his express Observation, as well as by its obvious Characters, very nearly related to the *Citrus* Kind. In that Tree the Filaments are numerous, and unite into several Bodies at their Bases; it is therefore placed among the *Polyadelphia*. This has a Tendency to the same Coalition; yet that Character not being perfect, it is placed by the Author among the *Dodecandria*, though the Number of Filaments is too great for that Account.

The Style is single, and this refers it to the *Monogynia*.

Culture of the STYRAX TREE.

It is a Native of the East and of the Southern Parts of *Europe*, frequent in the hottest Parts of *Syria*, and wild in *Italy* and in *France*. GAIRDEL found it in the Forest of St. Baume, in *Provence*, where the Peasants gave it the Name *Aligoufier*, and obtained a soft Resin from the wounded Bark, which they kept for medicinal Purposes, inwardly as a Balsamick and Deobstruent, and externally in fresh Wounds.

The Tree will live in the open Air, but that is hazardous: it is best to keep it in a Pot, and to give it the Shelter of a Green-house in Winter.

It may be raised from Cuttings, or produced from Seed; but a better Way than either is to order some small Trees of it from *Italy*, in the same Manner as we receive from thence the Orange and Jasmine Kinds.

There is hazard in raising it either Way here, though it will stand very well when rooted firmly; and as the Trees may be in this Manner brought over of the same Size with the Orange, the same Methods we use for those will bring this to shoot; and no Way will so soon, or so

easily afford handsome Trees. The Method of managing these we have delivered at large in a preceding Part of this Work.

If any chuse the Method by Cuttings, a shady Border of very rich Earth must be chosen for the Purpose, and the Cuttings must be planted in the usual Manner, watering them carefully till they are well rooted; and then removing them into Pots, planting one in each, and taking them up with a large Ball of the Mould.

The raising them from Seed is easier than this, and produces better Trees. The Time for it is Autumn: the Seeds ripened that Season should be used, and they should be sown in Pots of fine Mould, and those plunged up to the Rim in a Bark-bed.

The Seeds will lie a considerable Time in the Ground; but when the young Plants appear they must be planted out in separate Pots, and again plunged into Bark, and shaded and watered till they have taken good Root. They may then be by degrees hardened to the Air, and set out among the Green-house Plants. In Autumn they should be taken into Shelter with the Myrtles, and other Trees of that Kind; and they must then be allowed as much Air as the Nature of the Place will admit.

This Management will bring them to flower in Perfection; and as some will be to spare in the seedling Pots, they should be planted out in the open Ground, chusing a warm Place for them; and left to take their Chance.

With the same Care that is allowed to other tender Trees which stand the same Exposure, some of these will establish themselves firmly; and after that they will defy our Winters, and make a better Progress and Appearance than such as are housed, and confined to the small Limits of a Pot.

3. The HOP HORN BEAM.

Pl. 50.
Fig. 3.

This is a very handsome Forest Tree, native of the warmer Parts of *Europe*, and of *America*; and, very worthily, now universal in our Plantations. The Writers on Botany of late Time have all mentioned it.

C. BAUHINE calls it *Ostrya ulmo similis fructu racemoso lupulo simili*: Elm leaved *Ostrya* with Fruit like the Hop.

MICHEL, who very accurately investigated its Characters, calls it *Ostrya italica carpinifolio fructu longiore five brevior habitiore*: *Carpinus* leaved *Ostrya* with a longer, or shorter, and thicker Fruit.

LINNAEUS comprehending this and the common Hornbeam under the same Genus, gives them the Name *Carpinus*; and adds as the Distinction of this, *Squamis strobilorum inflatis*: *Carpinus* with the Scales of the Fruit swollen as it inflated.

Till the Time of this Author the Distinctions of Fruits were very ill expressed. We had no Name for this singular one of the *Ostrya*, which is formed of a Female Catkin: to this, and all others of the same Kind, he gives the Name *Strobilus*; which fully and perfectly distinguishes that Kind of Fruit from all others.

The Tree is large, and of a very good Form, branched, and shadowy. The Bark is brown on the Trunk, and paler on the young Branches.

The Leaves are very numerous, broad at the Base, smaller to the Point, and irregularly notched about the Edges. Their Colour is a fresh and pleasing green.

The Flowers are of two Kinds, Male and Female, on different Parts of the same Tree, both in the Form of Catkins, and neither conspicuous; the Female are followed by the singular Fruit, which;

Sept. which, resembling a Hop in Form and Colour, has given the Tree the Name *Hop Hornbeam*.

The Flowers of both Kinds very well deserve the Attention of the botanical Student.

The Male Flowers are clustered together in a long Catkin of a cylindrick Form, composed in a loose manner of Scales one over another.

The Scales are oval, hollowed, sharp pointed, edged with a Rim of stiff Hairs; and each serves as the Cup to one Flower.

This has no Petals: it consists of ten very short Filaments, each crowned with a double Button. These have a flowery Aspect, and have been called by some the Floscules of the *Carpinus*.

These Buttons are hairy at their Tops, of a compressed Form, and made of two Valves. There are in the Male Flowers no other Parts.

The Female are disposed in Catkins of an oblong Form, composed of Scales loosely laid over one another; and these are hairy, of a lanceolated Form, with the Point turned back; and each contains one Flower.

This has the Aspect of a Cup, and is formed of a single Piece cut at the Edge into six Segments, two of which are larger than the other four.

In the Base of this are placed two Rudiments; and each of these is crowned with two long, coloured Styles, terminated by small simple Heads. The whole Catkin of Female Flowers swells into

Sept. Thickness afterwards, and resembles the Hop. The several Scales swell up, and under each is contained a single Seed.

The Class of this Tree is not to be sought in the Number of the Filaments; but in the Disposition of the Male and Female Flowers separate on the same Tree. When they are on distinct Trees, the Class is the *Diacia*; but when they are separate in themselves, but both Kinds on the same Tree, the Class is the *Monacia*.

The Subdistinctions of this Class are in the first Instances taken from the Number of the Filaments; and these, when they exceed seven, are counted among the *Polyandria*. The *Carpinus* therefore is one of the *Monacia Polyandria*.

Culture of the HOP HORNBEAM.

It is a hardy Tree, and very easily propagated, it may be raised from Seed; but as the young Shoots take root freely in the Way of Layers, that Method is preferable, and is most practised.

They should be laid in Autumn in the usual Manner, and not be cut off till the Autumn following: they will by that Time have very good Roots; and should be planted in a Nursery to take two or three Years Growth; keeping them clear from Weeds, and training them up to the intended Form.

4. TERNATE LEAVED RUE.

Pl. 50. This is a very elegant and singular Plant, Fig. 4. plainly of the Rue Kind in Flower; but so extremely distinct in Form, that it appears singular the Characters should agree so perfectly; we owe the Knowledge of it to MICHELI.

The Flower wanting that Hairyness which is so conspicuous in that of the Rue, he separated it, and called it *Pseudo Ruta*: bastard Rue: but this is an Accident too slight to be received in the present improved State of the Science, as the Mark of a distinct Genus.

LINNÆUS refers it to the Rue Kind, and adds as the Distinction of the Species, *foliis ternatis sessilibus*: Rue with Leaves growing three together, without Footstalks.

The Root is long, slender, and hung with a few Fibres.

The Stalk is upright, simple, firm, and at the Top divided into a Number of Branches which spread out into a kind of Head: it is purplish toward the Bottom, and green upwards.

The Leaves are oblong, narrow, obtuse, and of a pale green. Three rise together, and they have no Footstalks. They stand close, and cover the whole Stalk from the Ground to the Top.

The Flowers are numerous, large, and of a delicate yellow: they crown all the Extremities of the Branches, and spread into a broad large Head.

Each Flower has its small permanent Cup formed of one Piece, and divided into five Segments.

The Body of the Flower is composed of five Filaments; they are long, oval, expanded, and have narrow Bases.

In the Centre are placed ten slender Filaments; they are equal in Length to the Petals, and they stand expanded, and have erect very short Buttons.

In the Centre of these is placed a single small Style crowned with a simple Head. The Rudiment from which this rises is irregularly prominent, marked with a Cross, and with ten Dots at the Base; and it becomes afterwards an irregular shaped Seed-vessel, with five Cells; in each of which are many Seeds, rough, and angulated.

The ten Filaments shew the Plant one of the *Decandria*, and the single Style refers it to the *Monogymia*.

Culture



*Ciliate leaved
Rhododendron*

The Storax Tree.

The Hop Hornbeam.

Ternate leaved Rue.

Purple Fragiacanth.

Lemon Savijrage.

Sept.

Culture of this RUE.

It is a Native of *Italy*, and other warmer Parts of *Europe*, and delights in a loose rich Mould, but does not require much of it.

In the native State it no where succeeds so well as where there is a little fine Soil among Rocks. To imitate this we should raise it in a Bed of rich Mould, close at the Foot of a warm Wall. The Method of propagating must be by Seed, and there will require no more than the common Care allowed to those Plants which are sown in Spring.

The Seed must be that of the preceding Sea-

son; and a deep Trench being filled near the Foot of such a Wall, with any one of the light and rich Composts we have directed, the Seeds must be scattered on in the last Week of *March*, and covered half a Quarter of an Inch with the same Mould.

When the Soil is too dry, a little Watering must be allowed; and when the Plants come up, they must be thinned to a considerable Distance.

After this they will require Watering in dry Seasons, but no farther Care except Weeding, and the common Attention shewn to other hardy Plants.

5. PURPLE TRAGACANTH.

Pl. 50.
Fig. 5.

This most elegant as well as singular Shrub is so lasting in its Nature, and of so easy Culture, that no Garden, where any Thing curious is entertained, should be without it.

The botanical Writers have a long Time been acquainted with it, but they have described it imperfectly and confusedly under the Name of a *Poterium*.

GARIDELL has described it under the Name of *Tragacantha Alpina sempervirens floribus purpurascens*.

LINNÆUS has abolished the before established Genus *Tragacanth*, and refers the Shrub usually understood by that Name to the *Astragalus* Kind: this he calls *Astragalus caudice arborecente petiolis spinoscentibus*: woody *Astragalus*, the Footstalks of whose Leaves terminate in Thorns.

This is that Author's Name for the common *Tragacanth* Shrub, and this elegant low Kind we describe here is no distinct Species from it; but one of those Varieties furnished by Nature, and capable of Improvement farther in Gardens.

The Root is of a vast Length, white, considerably thick, twisted, and hung with many long thick Fibres.

The Stems are woody, numerous, and spreading; they lie in part upon the Ground, and rarely exceed a Foot in Height: they are whitish, thick, tough, and beset with innumerable long and weak Prickles, formed of the pointed Footstalks of former Leaves: these also are white and woolly toward the Base; and they are sharp, though weak.

The Leaves rise among these, and are small and pinnated. Each is formed of six or eight Pairs of Pinnæ, with an odd one at the End; and these are of an oval Form; and white, and downy on the Surface.

These Leaves remain all Winter upon the Plant; and afterwards, when the Spring sends out a new Succession, their Pinnæ fall off; but the entire Footstalks remain, and assume the Form and Name of Prickles. This, as the Plant

N^o 50.

is very lasting, occasions its being extremely thick set with Thorns, so that it is difficult to touch it any where without Hurt.

Thus far the Plant is altogether white. The Flowers rise frequent among the Leaves and Prickles without Footstalks: they are of the *Papilionaceous* Form, moderately large, and of a very delicate pale Crimson.

This Colour is extremely set off by the Whiteness of the Plant; and as Flowers follow Flowers upon it for several Months, it remains a long Time a singular Ornament to the Garden.

Each Flower has its Cup, which is tubular, formed of one Piece, and divided at the Rim into five pointed Segments, the lower ones smaller than the upper.

The Vexillum, or upper Petal of the Flower is erect, obtuse, nipped at the Top, and turned back at the Sides, and is larger than the others: the Alæ, or Side Petals, are smaller, and of a simple Form; and the Carina, or lower Petal, is nipped at the End, and of the Length of the Alæ.

The Filaments are ten; nine coalesce and form a hollow Body, and one is loose. This places the Plant among the *Diadelphia decandria* of LINNÆUS.

The Rudiment of the Pod is rounded, and from this rises a simple Stile. The Fruit when ripened, is a Pod of two Cells. The Cells turned to one Side, and containing kidney-shaped Seeds.

Culture of this TRAGACANTH.

There can be no great Difficulty in raising in the Gardens of *England*, a Shrub which is common, wild upon Hills in the South of *France*. We are only to observe, that it must have a warm Spot; and as the Soil is not rich on the *French* Hills, that it must have a light though deep Earth for rooting.

Seeds may easily be obtained from *France*, and these should be sown in Spring in the Places

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where

Sept. where the Plants are to remain: no Place is better than such as we directed for the last named Plant, a Border at the Foot of an old South Wall.

The Plants must be thinned when they have a little Strength, and at Times watered; no Weeds must be suffered among them. By this Management they will send their long Roots deep into the Mould, and between the Bricks, and in all Crevices of the Wall. They will need little Care when they are once thus established, and will continue many Years an Ornament to the Garden.

If Seeds cannot be conveniently procured, the Plant may be propagated very well by Cuttings, but they will require the Assistance of Dung under the Mould; and to be shaded for some Time by Mats drawn over Hoops placed for that Purpose over the Bed.

The Season for this must be the End of *April*; and as there will be other Trees and Shrubs ready at the same Time for the same Kind of Propagation, one Trouble will serve for all.

The Cuttings must be taken off close to the Root, and the old Spines and Leaves cleared off

Sept. from the lower Part of them. They must be carefully planted, and the Mould pressed close to them; and from Time to Time they must be watered.

The Assistance of the Heat from the Dung is only necessary for their first shooting of Roots, so that as it decays there will need no Refreshment: the Plants may be by degrees exposed to the Sun and Air, and they must stand there all the Winter, sheltering them in the severest Weather by drawing the Mat over them.

The following Spring they may be planted out along the Foot of a Wall, at half a Yard Distance, and they will make flourishing and handsome Plants. They will require after this no particular Care; they will take up little Room, and that such as would serve no other Purpose, and they will give an everlasting Variety.

The Method from Seed is preferable, because there will be some Variety in the Flowers; they will be of various degrees of Crimson; and in some Plants the ground Colour will be very nearly white, and they will be streaked with Crimson like the Roman Cranes-bill.

6. LEMON SAXIFRAGE.

Pl. 50.
Fig. 6.

The Garden excludes no Plant on account of its Size, if there be Elegance or Peculiarity to recommend it: This pretty Weed has both. The Growth is very pleasing, and the Leaves as well as Flowers have their Beauty.

The old Writers were not unacquainted with it; but they have described it under an improper generical Name: the *Sedums* and *Saxifrages* have been greatly confounded together; and this which belongs to the latter Kind has been called by the former Name.

CLUSIUS calls it, *Sedum minus*. C. BAUHINE, *Sedum alpinum flore pallido*; and JOHN BAUHINE, *Sedum parvum montanum luteum*: the little House-leek, little pale flowered, and little yellow Mountain, or Alpine Houseleek.

LINNÆUS refers the Plant to the *Saxifraga*, and adds as the Distinction of the Species, *foliis caulinis lineari subulatis sparsis nudis inermibus, caulibus decumbentibus*: drooping Saxifrage, with the Leaves on the Stalks equal pointed, smooth, and placed at Distances.

Culture in a great measure takes away the Propriety of one of the Terms, that relating to the drooping Disposition of the Stalks, for they are tolerably erect, the rest continues unaltered; and there are so many Saxifrages, that the Name, though long, is necessarily so.

The Root is fibrous and small.

The Leaves are very numerous, oblong, and moderately broad; of a fine fresh green, waved a little at the Edges, and obtuse: they lie scattered in

circular Clusters on the Ground; and as the Plant encreases fast by Root, there usually are a great Number of these little Clusters of Leaves together forming one great Tuft.

The Stalks are very numerous, slender, naturally of a pale green, often brown or redish, beset with a few Leaves at Distances, and toward the Top branched. Their Length is ten Inches or more, but in the wild State of the Plant they usually lie for the greatest Part upon the Ground. In the better State of Culture they are more erect, but still very slender, weak, and delicate.

The Leaves on these are oblong, narrow, sharp pointed, and of a pale green, more or less tinged with brown or red, according to the Accidents of Growth.

The Flowers terminate all the Branches, and often there are a considerable Number also from small Side Shoots from them: they are moderately large, and of a very delicate pale yellow; much the Colour of Lemon-peel.

The Cup is formed of one Piece, divided lightly into five Segments, and is permanent.

Five Petals compose the Flower, and they are broad and rounded, but with narrow Bases.

In the Centre rise ten slender Filaments with rounded Buttons, and in the Midst of these appear two Styles: they rise from a roundish Rudiment of a Fruit, and have obtuse Heads. The ten Filaments refer the Plant to the *Decandria* of LINNÆUS, and the two Styles place it among the *Digynia*.

The

Sept.

The Seed-vessel, when ripened, is of an oval Form, with two Beaks, and contains numerous minute Seeds.

Culture of this SAXIFRAGE.

The Plant is a Native of the colder Parts of *Europe*, and will stand any Weather in an open Border. It naturally lives where there is a poor Soil and some Moisture, on the rocky Bottoms of Hills, and about the Heads of Springs.

The Seeds ripen freely, and from them the Plant is to be propagated with great Ease. A Spot is to be chosen in some shaded Part of the Garden, and fresh Pasture Mould is to be put into the Place with a very slight Covering of the com-

mon Earth of the Borders.

On this the Seeds are to be sown in the Beginning of *August*, and the Plants are to remain there, only thinning them, and keeping the Spot clear from Weeds. They will by Degrees increase in Bigness, till from every Root there will be a rising Tuft of a Foot Diameter, covered at the Season with innumerable Flowers on Branches, some upright, some leaning, and some lying in a very pleasing Manner upon the Tuft.

These small Plants deserve more Regard than is usually shewn them in Gardens: few have a just Idea of the Advantages of Variety; and beside that Benefit, there is a Look of Wildness and free Nature given by these, which never fails of pleasing.

Sept.

S E C T I O N II.

Of the Disposition of a G A R D E N.

IN the preceeding Number we led the Reader through every Consideration that should have Place in the Choice of a Piece of Ground for a Garden: we will suppose the Spot is now fixed upon; and proceed to consider its Distribution and the Arrangement of the several Parts.

These are three, 1. The Pleasure Garden, with 2. The Nursery or Seminary for its Supply; 3. The Kitchen Ground, and 4. The Orchard.

The general Term Garden comprehends all these; and, properly speaking, no Garden is compleat that has not all the Parts; nor can any one of them properly answer the Purpose of another.

The Flower Garden must be crowded with Seedlings, which have no Beauty; unless there be a Seminary for raising these, and retaining them till they are in a Condition to flower.

And in the same Manner are the Orchard, the Espalier, and in all Parts of the Garden, dependant upon that essential tho' unornamental Part of the Ground.

The Gardeners Task is indeed become easy by the Nurseryman doing the greatest Part of it for him; but on the Principles whereon we establish the Practice of that Art, every thing should be done with his own Hand; a Seminary will be necessary for many of his flowering Plants, tho' he should follow the beaten Path of buying his Fruit Trees from the Nurseryman: but as a small Spot will serve for the performing all that Business for himself, it should by no Means be omitted. We will suppose the Garden now to be designed is on this Plan, and shall treat of its several Parts, beginning with the Seminary, as the Supply for all the others.

C H A P. II.

Of the SEMINARY.

LET the Designer of the Gardener in this extensive View, take into his Imagination the Idea of the whole before he begin with forming any Part.

Let him consider the Pleasure Garden as the essential Article, and reserve for this not only the Body of the Ground, but every accidental Part that can be useful.

Wherever there is a fine View or a new Object, let the Spot be certainly set apart for that Pur-

pose, and when it is known by this Choice what can be spared, let him first look among that for a proper Part for the Seminary.

It will be proper to begin by laying down the Form of the Ground upon Paper: then having marked by a second Line what Quantity is designed for the Pleasure Garden, the Remainder between these two Lines will be the Part preserved for the Seminary, Orchard, and Kitchen Garden.

This

Sept.

This Plan should be ascertained by a Scale, and marked with the Points of the Compass; and the Designer may then form his Distribution upon the Paper, and afterwards transfer it to the Ground. This is the Season for putting the Seminary in first Order, and 'tis therefore we deferred to this Place, the Directions for its Management in the original Design.

The Plan of the Ground being laid down, let the Designer, before he chuse a Part for the Nursery, consider its Importance, and the Requisites to the Success of those Things which are to be raised on it: he will find the Situation and Soil so essential to Success, that he will know the Prosperity of his whole Work depends upon it.

In this Part are to be raised all Kinds of Flowers from Seed, all Forest Trees and flowering Shrubs from their Seeds, Layers, or Cuttings; and Stocks for the grafting and budding of Fruit Trees. In this Manner, he will find how much the other Parts depend on this; and though he knows that any Shape or Form of the Piece of Ground will do, yet he will perceive there is no trifling with regard to the Situation and Exposure.

Let the Piece on this Plan be open to the South East, and defended by Buildings, high Walls, or thick Plantations from the North. If it be irregular, in respect to the Surface, that is no Objection: different Degrees of Exposure suit different Things, and it will by that means afford a just and useful Variety.

Let it be remembered, that in treating of the Varieties of Flowers, the Quantity of Seedlings has been declared the true Source of Expectation; and let the Piece of Ground be therefore chosen larger than the common Custom, in Proportion to the Garden it is to supply; that there may be Room for this Multiplicity of the young Produce.

Let there be Shelter against furious Winds, and Shade from the full Sun of Noon Day. This is always in the Gardiner's Power, for there are Trees enough which grow freely, and will in a very short Time supply that needful Purpose.

Let the Soil be a good Pasture Mould, and in the digging it at first let the Gardener observe what Parts are dry, and where there is most Moisture, marking them for the necessary Purposes. No Manure must be used for this Part of the Ground; for it must not be so rich as that in which the Plants are finally to stand.

There will require Vigour in this Part, though Richness would be a Fault; and this Kind of Strength is to be found in the Freshness of the Earth, or obtained by good Tillage. In a Place where there have been no large or deep-rooting Growths, the Mould under the Turf is unexhausted, and its Freshness will answer all the Purposes of Nursery Culture.

When it has been impoverished by other Growths, the Way to refresh it again is, by a good digging, and a proper Kind of Fallow; throwing up the Ridges East and West, and breaking and turning them up afresh after they

have lain to receive the Influence of the Air.

Sept.

The wet Parts must be reserved for fibrous rooted Plants; the dry for bulbous and tuberous Flowers, and that which is deep and of a middling Nature for Trees. In Soils which are too dry, the Trees will grow slowly; but in such as are moist they will not continue found.

The Piece of Ground thus chosen, and its Qualities understood, it must be trenched two Foot deep; and in doing this, all Roots of perennial Weeds must be picked out carefully. This should be the Business of the present Week, and it should lie about three Weeks after in that Manner to mellow and sweeten; and to receive the Influences of the Sun and Air. At the End of that Time let it be all laid level, and marked out into Divisions, Beds, and Quarters, according to its Nature and the intended Service.

Let none of the Beds be broader than four Foot and a half; for the Convenience of weeding; and let the Quantity of each Kind that will be wanted, be the Rule for the Proportion of their Length.

The Ground, thus level'd and divided, will be ready for planting and sowing; and the Season for that Work in each Kind will be come.

Kernels and Seeds of the several Species may now be put into the Ground; and Stocks raised elsewhere, may be now also planted.

The Gardener knows that he is here to raise all biennial and perennial Flowers. In some Beds must be at the due Time planted the Off-sets of bulbous Roots, preserving them there till they are of a Bigness for the Flower Garden: in other Beds must be planted out Seedlings for gaining their due Growth and Strength for flowering. The delicate Way is to let those Kinds which are lasting, flower once here, that it may be known what they are, before they are removed into the Garden.

The Methods of performing their several Articles, and their proper Times, we have given in the Course of the Work; they are only recapitulated here to give a general View of the Use and Purpose of the Seminary; that the Gardener may not, by forgetting some Articles, be induced to allow it too little a Compass.

Water is an essential Thing to the Seminary, for all transplanted Roots require it in Abundance; and Care must be taken near some central Part of the Ground to have a Pond for retaining it, that there may not only be always enough in Readiness, but it may be of a Kind and Temper fit for the Service.

The Seminary should be concealed from the Garden, but the nearer it is to the middle of that Ground the better; for the Removal of Plants out of this Part into the Borders will be continual, and the less Way they are carried the better they will always succeed.

Care must be taken that the Ground be well fenced

Sept. fenced, for no Part of a Garden is so liable to Mischief by the breaking in of Vermin; and there should always be a Number of Traps set for the creeping; and Lime Twigs, or Trap Cages for the flying Devourers.

The Seeds and Shoots of Plants and Trees never fail to call these Creatures together, and they will dig for them into the Ground, or tear them up by the young Shoot, as soon as they appear.

The Labour of many Months, and Produce of the remotest Parts of the Earth, may thus be the Food of a Mouse; or a Sparrow; unless these Cautions are used to prevent the Mischief.

Finally, let the Ground be so disposed that it may at Times have the Advantage of Rest, and a kind of Fallow.

Nothing in the Culture of Plants is better known, than that the same Piece of Ground will not from Year to Year supply and support the same Growth, in Vigour. Changing the Plants from one Bed to another is a common Remedy for this; and some finding that insufficient, are at the Trouble of removing the Soil, and bringing in fresh at every Plantation. There is a Way much easier, and of equal Advantage.

We have directed the marking and dividing the Ground into Beds, with Alleys between, and there should never be in a Nursery any other Walks than such Alleys; no Grass, no Gravel, nor Sand Paths. These answer the Purpose; for it is not a Part of the Garden intended for Walks of Pleasure; and these should be dug up every Year, and made into Beds; and the Part that was Beds into Alleys.

This is very easy; it is attended with no particular Expence, and it fully answers the Purpose. The Trouble of drawing new Lines is all; and the Ground by this means, though it always wears the same Face, yet will be in a constant Course of Change and Succession.

Sept. Every Year the Beds where the Roots are must be dug up: the Time is different according to their several Natures, but once in the Course of twelve Months it must be done, fixing upon the Time when the Roots are most in a State of Rest. It is the Custom to break up the Bed; and when it has been well dug, to plant the Roots in it again. Instead of this let the Bed, and the adjoining Alley, be dug up together; and the Alley be marked out where the Bed was before.

The former Alley will by this means be the Bed, or will make at least a great Part of it: and as this consists of Mould on which nothing has grown for a full Year, it will be in a Condition of Freshness; and that which was the Bed, will by this Means have also a Year of Repose.

Mr. TULL, who happily applied Reason and good Sense to the Culture of Land, found by this Means that the same Piece of Ground would nourish Year after Year the same Crops: and there is the Proof of Experience for it in this Article.

Such is to be the Care of the Seminary, and of several Kinds will be the Growths planted or raised in it.

The common Care of Weedings and Watering are all this Part requires in Summer; and in Winter, all that is needed farther is the sheltering and defending the young Plants of the tenderer Kind by Mats drawn over the Beds, or warmer Covering laid about the Roots of the Plants and Trees.

The Gardener sees by this Review, that no Garden can be kept in order without the Assistance of a Seminary; and he sees at once before him all that is essential concerning it. This is the Time for fixing upon the Spot, and preparing the Ground.

C H A P. III.

Of the O R C H A R D.

THE Method of planting Fruit Trees against Walls and in Espaliers, gives the finer Kind a natural and advantageous Place in the Garden; but beside these, there should always be an Orchard.

The Produce of the Wall and Espalier Trees is principally for the Desert; the Kitchen requires its Provision also, and that is made from Standard or Orchard Trees.

Cyder is also an Article in many Places of great Consideration; and Perry requires only to be more known, to give it the Preference over many expensive Wines.

These Liquors are made from the Fruit of
N^o 50.

standard Trees; and where any Thing of this Kind is intended, the Orchard must have more Extent in Proportion.

If the South East Part of the Ground reserved from the laying down of the Pleasure Garden be not occupied by the Seminary, there is no Aspect so good for the Orchard: if that cannot be had, a Spot must be chosen that is defended from violent Winds, yet open to a free Air; and which has many Hours Sun in the Day.

It is a Thing of great Advantage to plant an Orchard upon a Piece of Ground which has a gentle Ascent. The Air blows naturally more
7 N free

Sept. free in such a Place, and that is of great Benefit to the Fruit; and the Wet runs off.

If the Descent be too great, the Mould will be washed away by hard Rains; and if the Ground be perfectly level, the Wet will lodge, and the Vapours from it will foul and spoil the Air: both these Accidents are to be avoided; and such a Choice as we have directed, will, in a manner insure the Success of the Plantation.

The Ground being thus chosen, the Disposition of the Trees is the next Thing to be considered; and in this we must guard our Pupil against two Errors almost universal among the common Designers of these kind of Plantations; these are the planting too many Trees on the Ground, and the suffering it to remain covered with the Turf.

There cannot be a more gloomy Prospect than one of the old *English* Orchards: Trees so close that their Tops meet, and a green Sward beneath, of no Use because spoiled by the perfect Shade; and yet serving to rob the Trees of that Influence of the Air, Rains, Dews, and Sun, so essential to good Vegetation.

It is very well known that the Fruit is finest where the Trees stand free, and clear of one another; and it is not less true that it will be also more in Quantity, if the Gardener thinks proper to leave all on which Nature affords: so much as the Tree can ripen, will always be much better; and a small Spot will even in this Way supply a large Family.

The Blasts of Spring which are so mischievous to Fruit Trees, are principally those of the North, or of some near Quarter, therefore Care should always be taken to shelter the Orchard from them.

If the Spot can be so chosen, a rising Ground defended from those Winds, is best of all: the next Defence to this is that of Buildings: if both these are wanting, their Place must be supplied by a good Plantation of Trees, Elms, or of such other Kinds as suit the Soil and Situation.

These must be planted at some considerable Distance, though exactly against that Quarter; for if too near, they would choak the Trees, and rob them of a great deal of their proper Nourishment.

This Defence being secured, and the Quantity of Ground settled, let it be dug up in the same Manner as that for the Seminary, and all Roots of perennial Weeds taken up with the same Care.

When this has been done three Weeks or a Month, it will be a very good Season for planting. The Surface must then be levelled, and Lines drawn for the Plantation. This is of all others the most important Article.

We see the Trees in old Orchards planted at fifteen Foot asunder, as if those who made the Plantation forgot they would ever be larger; and consequently their Branches meet, and the Air is pent up among them: the Trees starve one ano-

ther, and the Damps which are detained by the thick Shade, taint and spoil the Air. Sept.

On the contrary, we find modern Instructors advising the Plantation in Rows a hundred Foot asunder, and that the Trees stand sixty Feet one from another in the Rows.

The Intent of this is to raise Corn upon the Land as if no Trees were there: but we have on all Occasions inculcated that practical Lesson, that only one Thing should be attempted in one Place; and that the same Piece of Ground will yield more Advantage to the Owner by one Crop than by two; because the two will spoil one another, and the single Crop having all fair Advantages, will be more than worth both; and this not only in Excellence, but absolute Price and Quantity.

Therefore when the Plantation of an Orchard is to be made, let the Trees be allowed so much Distance from one another, as that their Roots may have room, and their Branches at full Growth a free Scope and fair Distance; but let no more Compass be allowed, nor any Thought entertained of Crops between.

Let the Rows be marked by Lines at forty Foot Distance, and the Places for the Reception of the Trees opened at the Distance of five and thirty Foot.

From the Time that the Trees are planted, let no Thought be entertained of raising any other Crop upon the Ground; but let it be kept in a State of good Tillage, and continual fallow from that Time.

By this Means the young Trees will make an Advance not known in other Plantations. Their Roots will be invited to expand every Way by a free, open, and loose Soil; and as it will have been meliorated by Culture, and unexhausted by any other Growth, it will be extremely rich, and every Fibre will be supplied with abundant Nourishment.

Let none suppose they can lose Ground by this kind of Plantation. The Fruit will always be fine, because there is every Way a free Passage for the Air; the Blossoms will be preserved because the Place is sheltered; and there will be no Blights, because all the Trees have full Nourishment; no Mildews, or other Accidents of that Kind, because no Air stagnates in the Plantation. This is the Doctrine of Reason, and this Experience confirms.

The Form, Construction, and Disposition of an Orchard being thus understood, the Choice of the Trees comes next under Consideration; and the Manner of planting them.

The Kinds of Fruit are wholly at the Pleasure of the Planter, but as there are particular Soils which suit particular Trees, it will be a very great Article to suit them to one another. Of this we have spoken in the preceding Parts of this Work, and shall under the following Heads concerning the several Kinds.

Let them be obtained from some Person of Integrity, and planted with more Care than the general rude Manner of working allows.

The

Sept.

The Holes being opened to a considerable Breadth, and the Mould very well broke at the Bottom, let the young Trees be brought in, their Roots trim'd, and the Mould laid about them with Care. This we have directed at large before.

Let a firm Stake be driven into the Ground by each, and let the Stem of the young Tree be tied up to it in two or three Places with a Hay-band; then give a very good Watering. Lay some thick Turf round about the Stem, with the grassy Side downward, and thus they will remain secure during the Winter.

Early in Spring let the Ground be plowed deep; and the old Turf being removed, let a fresh Parcel be laid round each Tree. After this they will require no more Care beside occasionally plowing up the Ground, till they are grown to a State for pruning.

Of this we have treated at large, but it may not be amiss to recapitulate the Matter in a few Words here.

The Trees must be brought in young; for though large ones may be removed in many Kinds, yet the Expence is much greater, and the Advantage less: for they will not bear so well, nor continue so long as those planted at a proper Growth.

Care should be taken that they are brought from a Ground that is not too rich, for in that case they would have a Check from the poorer Quality of the Orchard Soil, very difficult to be recovered.

The Pruning will consist chiefly in cutting out dead Branches; and clearing the Head where it happens to be encumbered by too many growing together.

When it happens that two cross one another, that which can best be spared must be removed; for they would otherwise gall one another, and both would be spoiled.

This is the whole System of pruning Standard Fruit Trees; for when their Branches are shortened, it only spoils the Heads, and throws out useless Wood.

The Orchard managed in this Manner will support itself without farther Expence: if the Soil be tolerably good, it will require no Addition of Manure.

It is customary on other Occasions, once in two or three Years to refresh the Ground with Dung; but, in general, the repeated Plowings answer that Purpose at a smaller Expence, and the Fruit is certain to be better tasted. If it happen that there appear a Want of Refreshment, it will be best given in Spring, and an equal Quantity of Soot and Hogs Dung, is preferable to any other Addition. A small Portion of this will answer for a great deal of Ground, and it must be scattered on just before one of the Plowings.

When Trees of different Growths are planted in the same Orchard, it is a good Rule to place those farthest back which will out-grow the rest, and the others gradually forward; all will then thrive; and what would in a promiscuous Plantation have been an Occasion of great Irregularity, will thus be a particular Beauty.

If any Tree or Trees in a Plantation made with this Regularity, do not bear so well as the rest, or so well as might reasonably be expected, spread a little Manure, such as we have directed, round the Stem every Way to ten Foot Distance: if this does not answer the Purpose, examine whether the Ground be particularly damp in that Place; and if it be, open a Trench to let off the Wet: if this be not the Case, examine whether the Tree be not planted too deep; if that appear to be the Cause, raise it, and pare away the Ground till it be no more covered than it ought to be; that is, till the upper Roots are within an Inch of the Surface.

If this does not answer, thin the Head by cutting away such Boughs as shade or crowd upon one another. One or more of these Methods will certainly remedy the Mischief.

Thus is an Orchard to be planted and kept in order.

Sept.



CHAP. IV.

Of the KITCHEN - GARDEN.

THE Seminary and Orchard considered, we have only the Kitchen Ground to lay out before we come to that interesting and important Article, the Disposition and Form of the Pleasure Garden.

No Family in the Country should be without a Kitchen Garden, whether or not they have any other: and the Success of this, and all its Crops,

will in a very great measure depend upon a due Choice of the Piece of Ground. Where the other Parts of a Garden are large, this should preserve its Proportion; for there is a Merit in the Correspondence of one Part of the Ground with another; and larger Families need more Supplies.

The Shape of the Piece of Ground allotted for this

Sept. this Use, is of no Importance, but its Situation is of a great deal. Dung will be required for the Hot-beds, and other Uses, in great Quantity; and that it may be at hand, the Kitchen Garden should be at no great Distance from the Stables.

A free mellow Soil is also essential to this Purpose: if it be too poor, that is easily mended; but if gravelly, or of the Nature of a tough Clay, there will be too much Labour in the working it, and a great deal of Difficulty in obtaining any good Produce.

Therefore when a Piece of Ground of due Extent, and of a free Soil, neither parched up with Drought, nor drenched with Wet is chosen; the Management of it is easy. These which we have named are Faults not to be remedied: the Conveniencies to be sought, beside those we have named, are Depth of Soil, and the Convenience of Water.

There is a Necessity that the Soil be in some Parts two Spades deep; and if Nature have not afforded this, Art and Industry must do it by digging out the Bottom, and throwing in good Mould. These Places are afterwards to be reserved for deep rooted Plants, Carrots, Parsnips, large rooted Parsley, Horfe-radish, and the like.

As soon as the Ground is thus fixed upon, it should be dug up two Spades Depth wherever the Soil allows, and as deep as may be elsewhere. Then the Surface must be levelled; and the Quarters laid out in such manner as hide the natural Irregularities of its Form, and suit the several Parts to their intended Growths.

Nearest the Place where the Water is, should be marked out the Beds for those Crops which will require the most of it: for the Labour of carrying a great deal of Water to a Distance, must always be saved as much as possible. For the same Reason the Hot-beds for Melons and Cucumbers must be placed near the Stables, that there may be as little Carriage as possible for the Dung.

It will be very proper when the Ground is first dug, to spread over it a good Quantity of old Cow Dung, Wood-pile Earth, Pond Mud, and Coal Ashes: these will be mixed in when the Ground is dug up for the several Crops, and they will enrich it in a very proper Manner.

Sept. If there be a gentle Ascent from one Part of the Ground to another, it is so much the better, for there will be dry Spots for some Services, and those which have more Moisture for others.

It should be open to the Sun, but well defended from the North Winds; and the best Fence is walling all round. This answers many Purposes. It conceals the Kitchen Ground from View; it defends the whole from Cold, and there will be space about these Walls for Fruit Trees, which never thrive better than in a Kitchen Garden. Of this the intelligent Gardener will easily conceive the Reason.

We have told him that the Roots of Fruit Trees spread very far; and that it is serviceable in the highest degree to dig and enrich the Ground at some Distance. When they have broad Borders, and well cultivated Ground beyond, they will be in the best possible Condition for bearing.

At a Distance beyond the Wall, it will be very proper on the North East to plant some large growing Trees: they will break the Power of those Winds which are most hurtful to the Spring Crops, and prevent a great deal of Mischief. For the rest, the Ground should be open: all shadowing from Trees or Buildings is bad.

The Height of the Walls should be twelve Feet, and the Borders for the Fruit Trees should equal these in Breadth: this is properly the first Article in the Distribution of the Ground. An Alley of three Foot should be marked out just within these; and thus the Quantity will be reduced to a much smaller Compass.

It is the Custom to sow slight rooting Crops upon the Borders under the Walls; but we have before observed that this is wrong, for more is lost in the Fruit than is gained in the Herbage. They should always be kept clear, and often turned.

The rest of the Ground must be laid out into long Beds, with narrow Alleys for the several Kinds of Kitchen Products; and where there is a good Extent, the whole should be laid out into several large Quarters, planted with Espaliers: but in small Kitchen Gardens, these and the Crops spoil one another. This is the right Disposition of a Kitchen Garden, the Management we have given under the former Heads.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUM B E R L I.

For the Beginning of *S E P T E M B E R*.

S E C T I O N I.

F L O R A, or the P L E A S U R E - G A R D E N.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. B E U R E R I A.

Sept. **W**E place here before the curious Eye, one of the finest Shrubs with which *America* has enriched our Gardens: in which every Circumstance of Value concurs, Singularity, Fragrance, and Beauty; which bears our Winters; and should have been long before this Time known more generally.

The Antients could know nothing of it, for no Country except *America* affords it native; but what is strange, is that although it has been in *England* many Years, few have taken it into their Gardens; and though known familiarly a great while, it has not yet an established botanical Name.

We owe the first Knowledge of it to CATESBY, an indefatigable Searcher after natural Curiosities in those Countries he traversed for that Purpose: he has figured and described it in a faithful, if not accurate Manner, and has named it in his Way, *Frutex corni foliis conjugatis, floribus instar anemones stellatæ, petalis crassis rigidis colore sordide rubente, cortice aromatico*: that is, Aromatick barked Shrub with coupled Leaves like those of the Coriell, and dusky red Flowers, with thick rigid Petals formed like the starry Anemones.

A better Account of its Characters we owe G. D. Ebret, the best modern Designer in Botany. His accurate Hand gave us a Figure of it under the Name of *Beureria petalis coriaceis oblongis, calycis foliolis reflexis*: *Beureria* with ob-

long tough Petals to the Flower, and with the Leaves of the Cup turned back: it has since this been called in *France Butneria*, and here *Basteria*: but it is singular, that although *Ebret*, whose Fidelity LINNÆUS knew to be equal to his Diligence, so long ago as in 1749, described and figured it; and long before him the first named CATESBY; yet that Author has not given it a Name or Place in his *Species Plantarum*, though published after *Ebret*'s Drawing was made; nor in his last Edition of the Genera in 1754; or his *Systema Naturæ* in 1756. though the Figure by *Ebret* was published before that Work.

No-body could have more Right to give a Name to it than *Ebret*, who first ascertained and figured its Characters. We therefore continue it that he gave, *Beureria*, which the Reputation of Mr. BEURER may very well warrant: but as there is no other known Species of this Genus, there needs not the Addition; it will be proper to call it simply by that generical Name.

Our Gardeners from the Figure of the Flower, or from what they had heard of the first Name given by CATESBY, called it the Anemone Tree; and some from the Fragrance of its Bark, which has the Scent of Nutmegs, Cloves, and Mace, at once, the All-spice Tree.

It is a tall Shrub of irregular Growth, very handsome in its natural wild Form, and capable

Sept. at the Gardener's Pleasure of being trained up to a regular Tree.

The Root is large and spreading; the Stem is firm and rough; the Branches are numerous, and spread irregularly, and their Bark is a pale brown.

The Leaves are broad, of a lanceolate oval Form; that is, oval except that they grow small again at the Base, and of a fresh but not deep green; undivided at the Edges, sharp pointed, and lightly rib'd: they stand in Pairs, and dispose themselves in all Directions.

The Flowers are the most singular of any thing in the botanical World: they are large, elegant, and of a deep but very dusky Purple; composed of numerous Petals waved, and irregularly disposed about a Multitude of Heads; and they have a faint but very singular Smell. The Bark has an aromack Smell, a much higher Degree, The Construction of the Flower is this.

The Cup is formed of a single Piece, thick, of a semi-oval Shape, or as if the larger End of the oval had been cut off, and hung about with five Segments. These do not rise from the Verge, or Edge of the solid Part, but break out irregularly from the Sides, toward the Middle some larger, and others smaller; and some higher, others lower.

The Petals rise from the Edge of the solid Part of the Cup, at some Distance above the Segments: they are about four and twenty in Number, and are disposed in two Series; those of the outer Series naturally stand expanded, those of the inner turn inward at the Points: they are all oblong, pointed, and a little waved. Their Substance is very tough and firm.

Those of the outer Series terminate, plain as the Petals of other Flowers; but at the Extremity of each of the Petals of the inner Series, there is a small, round, whitish, glandular Tubercle.

The Filaments are about twenty; they stand in a regular circular Series round the Verge of the Cup, close within the Insertion of the inner Series of Petals. They are of a most singular Structure, thick, moderately long, coloured as the Flower, and a little bent outwards.

Each is terminated by a Gland in the manner of the inner Series of the Petals; and as this takes the Place where the Buttons should naturally stand, that needful Part is fixed to the outer Part of that Prominence, which is formed by the bending of the Filament.

These Buttons are oblong, yellow, and large; they adhere close to this outer Part of the Filaments, but the whole internal Surface, or that which is toward the Centre of the Flower, is naked.

In the Centre of the Flower, surrounded by these Filaments, stand thirty or more Styles, each crowned with a small globular Head. These rise from so many Rudiments of Seeds, which are lodged in the solid Base, or Body of the Cup.

These are the succeeding Seeds, they have not ripened in *England*, nor have we any regular Ac-

count of the Fruetification from Abroad. All that we know is, that as the Flower fades, the fleshy Body of the Cup grows softer, and that the Rudiments of the Seeds are hairy.

The Class and Plate of the Shrub in the LINNÆAN System, are easily ascertained by these Characters: the numerous Filaments inserted on the Cup shew it to be one of the *Icosandria*; and the numerous Styles refer it also to the *Polygynia*.

Of all the known Genera it approaches nearest to the Rose; but the Difference is sufficient to constitute a separate Genus. This Difference consists in the Segments of the Cup, which in the Rose are regularly five; large, and continued from the Edge of the Body: whereas in this their Number is less certain; they are slight, and grow to the Sides, leaving an entire plain Edge.

In the Rose the Petals are broad, and of the Length of the Cup, and are naturally but five: whereas they are numerous, narrow, and longer than that Part many Times: in the Rose the Filaments are short, and have the Buttons in a natural Manner, on their Tops; whereas here they are long, and have them placed in a very singular Manner on their Sides. Proflably the Fruit of this Tree is like that of the Rose Kind; so far as we see of it, the Appearance is evidently that of a Hep.

The Situation of the Anthera, or Button, on the Side of the Filament, though out of the usual Course of Nature, is not particular to this Flower. 'Tis so in the *Herba Paris*, and in *Asarabacca*, but the glandular Extremities of the inner Series of Petals are very strange. These are properly the Nectaria of the Flower, and those on the Summits of the Filaments are perfectly the same: there is an Appearance also, that the Heads of the Styles are of the same Nature.

We see in the *Adenantha* a glandular Substance growing from the Button, or Anthera, whence the Plant has been named; that comes nearer the Condition of this singular Appearance than any other, but the Continuation of the Filament above the Button, and its Termination by such a glandular Substance in its Stead, is altogether peculiar to this Plant.

Culture of this BEURERIA.

It is a Native of the warmer Parts of *America*, but with due Care will live through the Year in our Gardens in the open Ground. We are to imitate Nature, who generally allows it a defended Situation, and deep Soil.

The Gardener must chuse for it a very rich Piece of Ground in some warm Quarter, and if he dig in a good Quantity of Pond Mud and some old Cow Dung, he will mend the Quality of the Soil without heating it.

The best Method of propagating it is by Layers: Cuttings are very precarious; and we have observed, that it neither ripens Seeds in *England*, nor have we seen the mature Fruit from abroad.

The Method of making the Layers must be the same as in other tender Shrubs.

A Quantity of rich Garden Mould must be put into

Sept. into a long rough Box, and this must be supported on a Tressel so high, that the Branch intended to be laid, can be brought down to it without much Force.

Then let an Opening be made along the Mould in the Box, and a young Branch of the Shrub brought down to it without much Violence.

Let some Holes be pierced through the Stalks about the Insertions of the Leaves, and a Piece of Brass Wire be twisted round it tight just above. In this Condition lay it in the Opening, fasten it down by Pegs; and covering the Mould, let it have a moderate Watering when it is first laid;

and let this be repeated as often as the Mould requires it. There is a great Advantage in using a large Box of Mould on this Occasion, for it continues much longer and better in a growing Condition than a small Quantity; and there is Danger in frequent Waterings of chilling the new Roots.

The Layer should remain a Year in this Condition, and it may then be removed and planted in a warm Situation with the same good Soil. It will flower after two or three Years, and from that Time constantly, and in vast Profusion.

2. THURINGIAN LAVATERA.

Pl. 51.
Fig. 2.

This is a well known and very specious Plant: frequent in the Gardens of those who love Variety, and worthy to be brought into all. The old Writers were acquainted with it, though not under the present Name; they called it a *Marshmallow*.

CAMERARIUS named it from its Country, *Thuringian*; and this DILLENIUS followed, adding the express Epithet, *Grandiflora*: large-flower'd *Thuringian Marshmallow*.

C. BAUHINE calls it also *Althea flore majore*: great flower'd Marshmallow; and by one or other of those Names it was known till the Time of LINNÆUS: he refers it to that Genus distinguished among the Mallow Kind by the Name *Lavatera*; and adds as its Distinction, *Caule herbaceo fructibus denudatis calycibus incis*: herbaceous Lavatera with naked Fruit and divided Cups.

The Root is long, and hung with many Fibres.

The first Leaves are roundish, heart-shaped at the Base, waved at the Edges, and placed upon pale green Footstalks; their Colour in the whole is a delicate but not strong green.

The Stalk is round, pale, and irregularly divided into Branches tolerably firm, and a Foot and a half high.

The Leaves on this are broad, short, sinuated deeply and irregularly, and of a paler green than those from the Root.

The Flowers are very large and specious; they grow at Random in all Parts of the Plant, and they are of a fine purple Crimson. In this however there is great Variety, some are deeper ting'd; some paler, and some absolutely white.

The Construction of the Flower and Parts of Impregnation very well deserve Attention. We have observed that it is one of the *Mallow* Kinds, and it very strongly and very well expresses the Characters of the peculiar Genus to which it belongs.

Before the Time of LINNÆUS that large Arrangement of Plants, to which we may properly give the general Name *Mallow*, was distributed at Random under the Denominations of *Málva*, *althea* and *Alcea*: mallow, marsh, and nervain Mallow; those who applied these Names to the peculiar Kinds, scarce knowing why they did so.

This Author formed the true Distinctions: referring the whole Tribe to certain regular Kinds, he gave and ascertained the Term *La-*

vatera to this and the others of its Sort, with the following distinctive Characters.

There are two Cups, an outer and an inner; the outer Cup is that formed of one Piece, and divided into three Segments; the inner Cup is formed also of one Piece, divided into five Segments, and both remain with the Fruit. The Flower is formed of five broad Petals, connected at the Bottom by very narrow Rases.

The Filaments are numerous, they unite in their lower Part into a Cylinder, and are inserted on the Petals; in the upper Part they are loose and free, and they are terminated by Kidney-shap'd Buttons.

In the Centre stands a large rounded Rudiment, with a short cylindrick Style, and numerous feather'd Heads.

When the Flower is fallen, the Rudiment ripens into a rounded Fruit, composed of a Kind of jointed Parts or Capsules, fixed to the Column or Receptacle. In each of these Joints or Capsules is one Kidney-shap'd Seed.

The Coalescence of the Filaments into one Body, shews the Plant to be of the *Monadelphous* Class, and their Number refers it to the *Polyandria* under that general Head.

Culture of this LAVATERA.

It is a Native of many Parts of *Europe*, and grows a Weed in Hedges like our common *Mallow*. The Gardener will therefore know there needs no great Care or Attention to raise it in the open Ground.

The Method is by sowing, and the great Care is to save good Seeds.

One Plant will ripen enough to raise some thousands, but the Gardener has been told already, that to ripen a great Quantity is not the Way to make the Plants fine; let a stout Plant be chosen, and only a moderate Number of Flowers be suffered to stand for Seed. Let these remain on the Plant till very well harden'd; and after that let them be separated, and spread upon a paper'd Shelf: after a Fortnight's lying there, and frequent Turning, let them be tyed up in a Paper, and hung up in the Seed Room till Spring.

In the middle of *March* let a Bed of good fresh Mould be dug up in the Seminary; and levelling

Sept. levelling the Surface, scatter on the Seeds pretty thick; lift over them a Quarter of an Inch of the same Mould, and leave them to Nature.

When the young Plants appear, let them be thinned to four Inches Distance, clear'd from Weeds, and water'd often.

In the Beginning of *May* they will be ready to transplant, and another Bed must be chosen for them in a shady Situation. In *September* they must be removed into the Borders where they are to flower, and kept weeded; and in Spring

often watered.

They will flower in their full Perfection, and there will be a great deal of Variety in the colouring.

From the finest Plants some Seeds should be saved according to the Directions already given, and thus every Season; there will by this Means not only be a constant Succession, but a continual Improvement of the Flowers in Bigness, and in the Delicacy of their colouring.

Sept.

3. The STRIP'D LILLY.

Pl. 51. This is a very fine and fragrant Flower, with all the Perfections of the common white Lilly, stately Growth, Abundance of Bloom, and most consummate Fragrance; and with the Advantages of a Variegation in Point of colouring; much in Character with the natural Flower; very delicate and very beautiful.

Fig. 3. It is a Seedling Variety of the white Lilly; nothing more.

Late Authors have been taught to call it after MARCHANT, *Lilium album flore lineis purpureis variegato*: the white Lilly with the Flower variegated with purple Lines: LINNÆUS, who disregards such Variations in his Account of Species, refers it to the original Plant, the common white Lilly, which he distinguishes from the other of the Lilly Kind by the Addition of *Foliis sparsis, corollis campanulatis intus glabris*: Lilly with scattered Leaves, with Bell-shap'd Flowers smooth within. The scattered Disposition of their Leaves, and Bell-shape of the Flowers, distinguish it from the *Martagons*, and the Smoothness of the inner Surface of the Petals, from the red Kinds which have protuberant Marks.

The Root is bulbous, and composed of a Multitude of Nuclei or thick Scales.

The first Leaves are long, moderately broad, waved at the Edges, obtuse, and of a fresh green; tinged along the Edge with a dusky brown; this is not the constant, but in the finest State of the Plant it is very conspicuous, and adds no little Beauty; at least Singularity.

The Stalk is round, thick, upright, and two Foot and a half high; the Colour a pale green, tinged variously with brown or purplish.

The Leaves stand thick upon this, and with perfect Irregularity; they are oblong, waved, and tinged more or less with brown.

The Flowers terminate and crown the Stalk in an elegant Tuft, six or eight of them together; they are large, and most extremely fragrant; white, and streaked along every Petal with a Rib of the most delicate crimson.

The Form of the Flower is perfectly the same with that of the common white Lilly.

There is no Cup, the Petals are six; long, large, and thick at the Point. They rise together from a narrow Base, and swell out into Breadth till the whole Flower resembles a broad-mouth'd Bell. They have a hollow on their Back, and their thick Ends are obtuse: at the Base of

every Petal there is a longitudinal Line, which is the Nectarium.

The Filaments are six; they are smallest toward the Top, and they are crowned with oblong, large, incumbent Buttons.

The Rudiment of the Fruit is oblong, and has six Ridges; from this rises a single Style of a cylindrick Figure, crowned with a triangular obtuse Head. The Class and Place of this Plant in the *Linnean* System are extremely plain; the six Filaments refer it to the *Hexandria*, and the single Style shews it one of the *Monogynia*.

Culture of this LILLY.

The Plant is Native of the East, and thrives in rich Soil where there is open Air and some Moisture. This elegant Variety of it has been the Result of Accident among frequent sowings. We have on various Occasions told the Gardener, that he who will sow ofteneft and most largely, will not fail of many new Flowers in the bulbous Kinds. This may be produced thus by the modern Gardener as it was originally, but that is precarious, and cannot be expected but as the Result of many Trials.

The Flower in this striped State ripens its Seed freely, and affords Off-sets as plentifully as in the simple State, and it may be encreased and propagated from them. The Method by Off-sets is very easy.

When the Leaves are decayed after the Season of flowering, the Roots must be taken up, and at that Time, in the perfect Manner of Culture, we recommend there should be two Beds dug up, one in the Garden, the other in the Nursery; that in the Garden is for the Reception of the old Roots again, and it may either be in the same Spot with Change of Mould, or in another; That in the Nursery is for receiving the Off-sets, and nourishing them till they are of a Size to flower strongly.

The Off-sets, being all taken off, must be planted at eight Inches Distance in the Nursery Bed, and covered an Inch with the Mould; the old Roots should be allowed fifteen Inches Distance every Way.

Some take up the Roots only once in three Years; but the right Practice is to do it every Year: this not only affords more Off-sets for Propagation,



1 *Beureria*

2 *Thuringian Lavatera*



3 *The Striped Lilly*

4 *Yellow Pyrenean Aconite*



5 *Lanceolate Broom*



6 *Scarlet Monarda*

Sept. pagation, but the old Roots flower much more strongly for being cleared of them.

They are to be planted again as soon as cleared from these, for the scaly Bulbs do not bear like the tunicated or solid to be kept out of the Ground. There needs no Compost to be made for them, for they succeed very well in Garden Mould.

When the Off-sets have stood in the Nursery Bed till they flower strongly, they are to be brought into the Garden, and treated just as the others.

This is the Method of encreasing the strip'd *Lilly* by Off-sets, and thus it will retain its Nature; but the Elegance of colouring and farther Variation, is only to be continued as the Flower first was raised, by a careful sowing of the Seeds.

To this Purpose let a good Plant be marked for Seed, and encouraged to ripen them perfectly by suffering only the three first Flowers which opened to remain, and by frequent watering and breaking of the Soil.

Let the Stalk be tied up to a firm Stake, to prevent the Accidents from Winds; and when the Seed-vessels are tolerably hardened upon the Plant, let them be taken off, and laid for a Fortnight upon a paper'd Shelf, turning them every Day.

Then open them, take out the Seeds, spread them upon the Shelf, and air them ten Days; at the End of this Time they will be fit for sowing.

Dig out a Piece of Ground in a Part of the Nursery which is well sheltered, but open to the Morning Sun. Fill up the Place with fresh Mould taken from under the Turf in a rich Pasture, and scatter on the Seeds. Sift over them a Finger's Breadth of the same Pasture Mould, and lay a Thorn Bush upon the Bed to keep off Accidents.

Let all Weeds be pick'd off as they appear; and when the Plants come up let them be thinned, if they rise in any Part too close; and from this Time carefully watered. If they are

exposed to the Noon Sun let the Bed be shaded by a Reed Hedge.

In the Beginning of *August* let a large Bed of the same Earth be prepared, and let the Mould be taken off the Surface of the Seed Bed so deep as to take up all the Roots. Let this Earth with the Roots in it, (for they are too small to plant separate) be spread carefully over the Surface of the new Bed, and sift over it half an Inch of more Mould.

In severe Weather cover it with a Coat of Pea-straw, and in Spring stir the Surface very lightly and gently, so as not to disturb the Roots; and sift on a Quarter of an Inch more of the Mould: the Leaves will soon appear, and the Bed must be carefully weeded and well watered in dry Seasons; a little at a Time, but often repeated.

In the *September* following make up a larger Bed, and separate the Roots by sifting the Mould of the first Bed. Plant them in this new Bed four Inches distant, see the Heads are placed upwards, and sift over them more Mould till they are covered half an Inch.

The second Year after this Removal they will flower, and there will be found an elegant Variety; as a great Quantity of the Seed of the common white *Lilly* would have a Chance to raise some strip'd Flowers, so there probably will be from the Seed of the strip'd some white ones, but the strip'd ones will be very numerous, and there will be among them a great deal of Variation. The Stripes will be broader and stronger in some, paler and slighter in others; and they will, in some Flowers, ramble over the whole Petals with a very rich and pleasing Variegation.

These Roots are to be managed as we have before directed, treating of raising the Plant from Off-sets: they must be taken up every Year, the Off-sets must be carefully removed, and planted at four Inches Distance in a Nursery Bed to gather Strength; the grown Root thus cleared, must be planted again as at first, only in fresh Mould.

4. YELLOW PYRENÆAN ACONITE.

Pl. 51. This very singular and elegant Plant is yet less
Fig. 4. common than it should be in our Gardens; 'tis hardy, of easy Culture, and never can fail to be a Source of Variety.

It is Native of so many Parts of the World, that one wonders to see so few of the botanical Writers describe it. This cannot have arisen from their not having seen the Plant, but to their overlooking its distinctive Characters; they have doubtless confounded it with the common yellow *Aconite*, supposing that extreme Diversity of the Leaves accidental, which later and more accurate Searchers have found to be specifick.

RAY, in his Catalogue of the *European* Plants, extraneous to *Britain*, names it, and very justly marks the Distinction. He calls it *Aconitum Pyrenaicum luteum foliorum segmentis sibi invicem incumbentibus*. LINNÆUS, *Aconitum foliis multipartitis*,
N° 51.

laciniis linearibus incumbentibus squarrosis: *Aconite* with divided Leaves and linear Segments, loose and lying over one another.

The Root is composed of a Multitude of long twisted, blackish Fibres, connected to a small thick Head.

The Stalk is a Yard high, pale, upright, and not branched: several Shoots rise from the Bosoms of the upper Leaves, but they are small and erect; the main Stalk runs up single and undivided.

The Leaves are of a pale but not unpleasing green; and in rich Soils often considerably deeper. They have long Footstalks also of a faint green, and they hang from them in a palmated Form, but with wild and strange Irregularity.

Each Leaf is divided to the Rib into five Segments; these are long, narrow, rarely of equal Breadth,

Sept. Breadth, and cut into deep Segments, or at the least deeply notched at the Edges, and sharp pointed.

The lower Leaves sometimes have these Segments expanded flat and regularly; so we have represented them in the lower Leaf of the annexed Figure to shew the real Form; but the general Disposition is much otherwise. The Form of the Leaf is the same, but nothing is so wild as the Arrangement of their Segments; they fall against and over one another, and they expand and twist themselves in various odd Directions.

The Flowers are extremely elegant; they are numerous, and they terminate the main Stalk, and all the Branches in a Kind of short Spikes. Each has its Footstalk, and their Colour is a very singular pale, and as it were whitish yellow. Their Form is properly that of the *Aconite* Flower, extravagant, but too common to have the due Admiration.

There is no Cup. The Body of the Flower is composed of five Petals, one of which is placed above, two below, and two sideways. The upper Petal is tubulate and galeated, inverted or placed with the Back upwards, and is obtuse, the Head bent back to the Base, and pointed: to this Head, the Base, where the Connection is, stands opposite. This is the strange Form of the upper Petal, not easily intelligible by Words alone, but familiar by Comparison of the Flower; the two side Petals are broad, rounded, placed opposite and convergent; the two lowest are oblong and narrower, and they hang downward.

There are two Nectaria very singularly disposed; hid as it were under the upper Petal. They are hollow, and have an oblique Mouth, and they stand nodding; and have a crooked Tail: these singular Parts are placed on long Footstalks, slenderer toward the Top.

The Filaments are numerous and short, they are slender, and they turn toward the upper Petal: they are broad at the Base, and they have small upright Buttons. In the midst of these stand five Styles of the Length of the Filaments, rising from so many Rudiments of Seed-vessels, and terminated by simple reflex Heads.

The Fruit is composed of so many Seed-vessels, and each contains several rough angular Seeds.

The numerous Filaments are inserted on the Receptacle, and this shews the Plant one of the *Polyandria*. The Styles being five, as plainly refer it to the *Pentagynia*.

It is needful to observe, that in the *Linnean* Genera, the Place of this Plant is among the *Polyandria trigynia*: that Author was induced, by the Necessity of his Method, to misplace the Plant. It has not been done by Oversight, but knowingly; for he has named its five Rudiments and five Styles: the rest of the *Aconites* have only three; and those he was obliged to place among the *Trigynia* by that absolute Character.

This and the common yellow *Aconite* have five Styles, and so many Rudiments of Fruit; but they are perfect *Aconites*, for they agree in all

other Characters with the rest of that Genus.

Sept.

To have separated these two by an intermediate Order from the rest of the *Aconites*, would have been most unjustifiable; for it is against all Rule to divide a Genus, and displace some of its Species.

LINNÆUS saw this, and he submitted to the Necessity of joining these to the other *Aconites*; allowing them of the same Genus, tho' of a different Order or superior Division. It is one of the Instances of Imperfection in his Method, and justifies what I have had Occasion to observe in another Work, and what the World will one Time own universally of the Imperfection, to use no harder Term, of the classical Distribution by minute Parts. Let our Student understand the Merits of LINNÆUS properly. His Characters of Genera are accurate and most scientifick; and his Names of Species happily distinctive. In these, which are the two great Articles of botanical Improvement, he has exceeded all Men, and has more advanced the Science than the whole Catalogue of Names, great as they are, who went before him. This is his Merit, but the classical Distribution does too much Violence to Nature.

Culture of this ACONITE.

It is a Native of the northern Parts of *Europe*; and many other cool Parts of the World. The Soil which best suits it is a moist rich Mould, and it succeeds best in Exposure; the Shade of Trees does not destroy the Plant, but it never flowers so well under it, nor is so healthy.

The common and easy Way of propagating it is by parting the Roots in Autumn; but 'tis very easy to raise it from Seed, and in that State it always succeeds better.

Let some good Seed be procured from a Plant in an open rich Soil, which has not been suffered to produce too large a Quantity. No Side-shoots should in these Seed Plants be suffered to flower, and the Top of the Spike should be nip'd off to prevent the upper Flowers. Thus the Seed-vessels of six or eight of the lower ones will fill with perfect Seeds.

Let these be dried in the usual Manner, and kept during Winter.

In the Beginning of *March* let a Bed be dug in an exposed Part of the Nursery, and these Seeds scatter'd on. Let a Finger's Breadth of Mould be sifted over them.

When the Plants appear, thin them to five Inches Distance, leaving only the strongest; and in *May* transplant these into another Border in the Nursery at eight Inches asunder. In *September* take them up with good Balls of Earth, and remove them into the Garden. They will flower in full Perfection the following Season.

Seeds should be saved from the finest Plants with the Care above directed, and sown every Year: the Trouble is little, and the Advantage will be the keeping the Plant in its full Perfection, and perhaps improving it every Season.

Sept.

Sept.

5. LANCEOLATE BROOM.

This is a very elegant Shrub, hardy, of easy Culture, and for many Months full of Flowers. It has been known long to the Writers on Botany, who have distinguished it by various Names, but all referring it to the Broom Kind.

CAMERARIUS calls it, *Chamægenista sagittalis Pannonica*. C. BAUHINE only *Chamægenista sagittalis*: the *Arrow Broom*, or *Dutch Arrow Broom*, so called from the Leaves resembling an Arrow Head. J. BAUHINE calls it *Genistella* and *Chamæ Spartium*, and the common Writers, *Genistella Montana*.

LINNÆUS, who first well understood the Distinctions in these Genera, and referred them to their proper Places, ranks this among the *Genistæ*, adding as the Distinction of the Species, *ramis amipitibus articulatis foliis ovato lanceolatis*: Broom with edged and jointed Stalks, and oval lanceolate Leaves.

The Root spreads far under the Surface.

The Stem is firm, divided into many Branches, and the whole Plant about two Foot and a half high.

The young Shoots are edged and jointed, of a pale green, and lightly hairy; the Leaves stand singly, and they are oblong, and undivided at the Edges; of a fresh green, but covered with a light Hoaryness.

The Flowers are moderately large, and very numerous: they stand in loose Spikes all along the Tops of the Stalks and Branches, and follow one another in a long Succession. They are of the papilionaceous Form, and of a fine yellow, and each is followed by a small hairy Pod.

'Tis fit the Student examine them with Attention, that he may understand the Reasons of LINNÆUS's Distribution.

The Cup is small, hollow, formed of one Piece, and lightly divided into two Lips: of these the upper has two Points, with a deep Division; the under Lip is cut into three nearly equal Segments.

The Flower consists as other papilionaceous Kinds, of a Vexillum, two Alæ, and the Carina.

The Vexillum is of an oval acute Form, and distinct from the Carina, and bends back entire; the Alæ are oblong, but shorter than the Carina; the Carina is nip'd at the End: it runs out straight, and is longer than the Vexillum.

This is the perfect Structure of the full open'd Flower.

In this are placed ten Filaments, which grow together, and are crowned with simple Buttons.

The Style is simple, and turns upward; the Rudiment from which it runs is oblong, and the Head is acute. The Seed-vessel is a short Pod, and the Seed Kidney-shaped.

LINNÆUS places this Genus among the *Diadelphia*, although the Filaments unite but into one Body; their Number, which is ten, refers it plainly to the *Decandria*.

It is thus Nature will sometimes, indeed too often, break in upon the Classes of this Author. 'Tis certain that the Genista should not be separated from the other papilionaceous Kinds; but it is also evident, the Character established on the Arrangement of the Filaments into two Assortments, will not properly unite them.

Culture of this GENISTA.

It is a very hardy Shrub, and easily raised from Seed.

A small Bed must be dug up in the Nursery, and the Seeds sowed from a strong Plant sown on it the first Week in *April*.

When the Plants appear they should be thin'd to six Inches Distance, and weeded and watered throughout the Summer.

The succeeding Spring a fresh Bed must be prepared for them; and they must be taken up with Care, and planted at two Foot Distance. Here they should remain till the succeeding Spring, and they will then be fit to remove into their Places. This gives them Strength, and affords the Gardener an Opportunity to form them, and after this they will require no Care but what is allowed all other Plants, weeding and watering, and will flower profusely.

6. SCARLET MONARDA.

Pl. 51. Fig. 6. The modern Gardener is very well acquainted with this Plant, whose Fragrance and Colour demand a Place for it in every Collection, and have made it nearly universal. The old Authors could not know the Plant, for it is an *American*; but those who have written since have celebrated it.

BUTNER calls it, *Monarda floribus capitatis verticillatisque, caule acute angulato foliis lanceolato serratis glabris*: Monarda with headed and verticillate Flowers, with a sharp angled Stalk, and lanceolate ferrated Leaves.

LINNÆUS in his former Works called it, *Monarda caule acute angulato capitulis terminalibus*: but in his latest, *Monarda floribus capitatis subdi-*

dynamis caule acut-angulo: acute angular stalked Monarda, with headed Flowers approaching to the *Didynamious* Kind.

The Root is composed of numerous Fibres connected to an oblong Head.

The Stalk is square, thick, firm, upright, and two Foot high: the Angles are sharp, and the Colour is a pale green; often tinged with brown or red.

The Leaves are placed in Pairs, and have short Footstalks: they are broad, sharp pointed, deeply ferrated at the Edges, and of a deep strong green; uneven on the Surface, and marked with large Ribs.

The

Sept. The Flowers naturally terminate the Stalk in a large and fine scarlet Head; but often in good Ground there will rise another Head, supported on a slight Stalk, which takes its Origin from the Centre of the first, and is a kind of Continuation of the main Stem.

On the Summit of this is supported the secondary Head, less and slighter than the first; and to this accidental Change in the Form is owing the Confusion among those who have described it, and who did not know whether to call the Flowers capitated or verticillate: the first Head acquires the verticillate Form on the Appearance of the other.

The Flowers are very numerous, singular, and elegant: they are long, tubulated, gaping, and in Colour of a most elegant scarlet; a little paler or a little deeper, according to the Degree of Culture, but always beautiful.

The Cup is formed of one Piece, tubular, striated, and cut into five equal Segments at the Edge.

One Petal forms the Flower, it rises from the Cup with a long Tube, and is at the Extremity split as it were into two Lips. The upper Lip is long, narrow, and undivided, and all the Way of equal Breadth. The lower Lip is broader, it turns down, and is cut into three Segments, of which the two Side ones are small and obtuse, and the middle one longer, narrower, and nip'd at the End.

The Filaments are two, they are long, slender, and crowned with compressed Buttons, which terminate abruptly on the upper Part, and are convex on the lower, and placed erect.

There are beside these two other imperfect Filaments shorter, and without Buttons, or with

imperfect ones, this has given occasion to the Term *Subdidynamious* in the LINNÆAN Name. Sept.

The Style is single, and has a split Head: it rises from a square Rudiment, which ripens into four Seeds, and they remain naked in the Cup.

The two Filaments place this Plant among the *Diandria* of LINNÆUS, and the single Style among the *Monogynia*. So himself has placed this Genus, but the two shorter and less perfect Filaments seem to refer this Species to the *Didynamia*. Indeed the Plants of these two Classes, tho' so far separated in the System, are nearly allied in Nature:

Culture of this MONARDA.

The Seeds ripen freely with us, and they will grow as readily: this is therefore the proper Method of propagating the Plant. Let them be saved from a flourishing Plant, and in the Beginning of September sown upon a Bed of fresh Earth in the Seminary.

The Plant is a Native of the colder Parts of America, and will require no great Attention to raise it. The young Plants must be thinned, and weeded, and watered in Spring, and toward the End of May they may be taken up with a Ball of Earth, and planted where they are to remain.

They will require frequent Waterings, and they should have a Foot and half Distance from one another, or from other Plants, and they will thus flower in full Perfection.

There will not be any great Difference in the Colour of the Flowers; they will be a little paler, or a little stronger; but in whatever degree they have the Colour, it is in itself so elegant, that they never can want Beauty.

S E C T. II.

Of the laying out a PLEASURE GARDEN.

THE Gardener remembers how far we have in the preceding Numbers advanced in the Disposition and Arrangement of a Garden. The Out-skirts of the selected Piece of Ground have been formed, according to their various Qualities and Condition, into the several necessary Appendages: the Orchard, Seminary, and Kitchen Ground have been marked out; and there remains the principal Part to be formed into a Pleasure Garden.

This is the most delicate Point, and the least understood of all: a false Taste which had long reigned is now banished, and Nature prevails under the Conduct of good Sense.

We see, however, but few good Gardens; and those we admire most are yet imperfect. Their Designers have concealed the Art which they have weakly exerted: what we propose is to explain the Principles, and proceed upon them toward a greater Perfection.

Our Designer has before him a chosen Spot of Ground; open to the Morning Sun, rising by a slight Ascent, planted at Distances, or in order for such a Plantation, and situated in the Midst of an agreeable and well diversify'd Country: this he is to dispose so as to be most agreeable to itself, most varied that can be in its several Parts, and so that it may have the best Command of the adjacent Country.

He is to give a Harmony and Agreement of the several Parts within, and to diversify the Prospects by a due Choice of the innumerable Objects which offer from without; and as he is at length freed from the confined Taste of former Time, he is to indulge that Liberty with Moderation. What is to be attempted in general, is to give the Spot a smiling and a natural Aspect: to consider first what is most beautiful in Nature, and then to embellish and improve it without destroying that Character.

Sept.

Sept.

C H A P. II.

Of VIEWS.

IF we look out into the Fields, we admire near about us the free Growth of the Hedge, and the fresh Verdure of the Pasture. These let us imitate by giving the Trees their natural Wildness, and by providing a Soil where every Thing will flourish: what charms us at a Distance in this wild View is the Inequality of the Ground, and its various Cloathing.

In one Part a Hill presents us on its Side a hanging Wood; in another, a River pursuing its winding Course; now lost, now seen again: in a third, an Extent of many Acres covered with one Sheet of Corn, fills the Mind with an Idea of Fertility and Plenty; while, on the other Side, the Eye traverses a greater Extent enclosed, divided, cultivated, and improved to such a Height, that it appears a Garden.

These are the agreeable Objects, and it is necessary to consider these first in the Account, because the finest Views should be left open; and the Plantations, Walks, and Pavilions, placed and disposed accordingly.

Beside these, there are in Nature Objects of Disgust, and Horror, which yet may be introduced happily; burnt Hills, and blasted Heaths, and barren Rocks, and the wild Waste of Commons, afford a Contrast with these pleasing Objects; and where Nature has placed them within Reach, the Designer should never fail to open his Views to them. Every Thing that is great, independent of all other Considerations.

These Objects therefore will be sure to please, but they must be introduced with a sparing Hand, and with Judgment intermixed among the others: they are the Discords in the Musick of Gardening; and as the Shades in Painting, they give

Harmony, Relief, and new Grace to the others.

The *Chinese*, whom it would be well we continued to imitate in this Matter, if we can imitate with Moderation, indulge the romantick Genius of their Nation to a degree of Caprice that becomes ridiculous often, and sometimes absurd in this Diversity.

Let us learn from them, that the sudden Transition from agreeable to horrid; and from gay to gloomy, is pleasing; but let us correct the untutored Wildness of their Imaginations, by forming nothing beyond the Laws of Nature.

These form the great Views; and to these should be added all those accidental Objects which may be made Points of Prospects; old Buildings, single Trees, a Windmill, or a Barn, will sometimes serve this Purpose happily.

Thus let the Designer view what there is in Nature out of the Compass of his Ground, and consider in what Manner he may use it to Advantage. Let him not suppose he should, or that he can bring in every Thing that is charming, or every Thing that is proper.

What has been said of Poets, is as true of Designers in the present Instance: they lose half their Praise, by the Eye not seeing what they reject, and why.

Let it be considered which of these several Objects must be brought in, and in what order: the Eye must travel over them with such Diversity, that every Thing must be new, and each Part set off the other.

Let him not grudge therefore to shut out an agreeable View in one Place, but consider how to bring it in at another, where it may have this Charm of Novelty.

C H A P. III.

Of the Disposition of WALKS.

THIS is the Rule on which the Gardener is to mark the first Design of Walks and Hedges, open Spots and Plantations. He must shut out by the Plantations every disagreeable Object, except such as are adopted for Contrast; and he must often debar the Eye the Pleasure of a smiling Prospect, because it has too much Resemblance to those on either Side of it. Having marked his Openings, and his Spots for Plantation upon this Principle, let

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him again go the Round, condemning or confirming his first Judgment.

The great Point is thus established; and his next Care is the Disposition of the Space agreeably to these first Principles: there are a Thousand Ways in which the same Piece of Ground may be laid out with these destined Openings and Plantations.

Our Ancestors chose the most methodical and regular;

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Sept. regular; all was done by Rule and Line, and this gave their Works that Formality our better Taste detests.

Let us again refer for the Rule of our Conduct to Nature, she is never so charming as where wildest. There is an easy Freedom, and a pleasing Negligence in her Disposition which charms, because it is not regular. There is a Stiffness in this Work by Rule, which is always displeasing to a delicate Eye; a Garden is to be a fine Field, and we must not permit too much Symmetry, where we have observed that Freedom is the greatest Grace.

If any suppose by this that an artless Distribution of the Ground is what we direct, or what they admire in those Gardens which stand recommended by this true Taste, they err extremely. It is an Air of Irregularity we advise, not Irregularity itself; there requires more Art by far in this Distribution, than in any other; and there requires afterwards the great additional Labour of concealing it.

The *Chinese*, whom we admire, have fallen too much into this absolute Wildness; and this should be the Difference between their Originals, and our Copies. Every Thing we see should be chosen for its Place, though it seem the Result of Accident; there should be Order in every Place, though under the Aspect of wild Freedom, and a certain Harmony where there is the Aspect of Confusion.

When the Places for Thickets, Clumps, and Groves, are by the first Rule chosen, where there is something to be hid; and, according to the present Direction, marked out with an Air of native Wildness, the Walks are to be so disposed, that they add to the Prospects, that they differ from one another, and yet that there be an universal Proportion. Their Length is determined by the Quantity of the Ground, but their Breadth is at the Pleasure of the Designer, and in this let

him exceed the usual Proportion.

Every Thing that has a confined Air relishes of Littleness, and these are the two worst Ideas we can conceive in a Garden; to be shut up in a Garden is to return to the four Walls of our Ancestors.

The Purpose of the Thing is subverted by this: to breathe the free Air, to walk at Ease, and to be entertained with present Beauties, and remote Prospects; these are the Purposes of a Garden, and these depend in a great measure upon the Breadth of the Walks. Their Form may be various, the strait and serpentine are both in their Way agreeable, but it is an essential Point in both to have Extent.

The Trees which terminate their Sides, must no more crowd upon the Walk than upon one another: the free Growth and the Beauty of the Place depend equally upon Distance. A narrow Walk terminated by two clipped Hedges was once a Favourite Taste, but it is justly now excluded: a Wall is as good a Boundary, and such a Walk is but a Street out of Town.

Shade must be had in Gardens, and this the Trees left to Nature afford freely; nor is it necessary where the Walks are thus planted, to run into damp Groves; or weary the Steps in narrow Serpentes, to escape the Sun.

The Freshness of the Verdure is another Article of vast Importance in Gardens; and this, as well as the rest, will depend in a great measure upon that Space of Walks and Openness we advise in all Parts: without free Air nothing can thrive, not even the low Grass of the Walks. A few broad Walks are preferable to a great Number of narrow ones: in a Thing intended to be great, all the Parts should be great; and if the Points and Objects be all brought into View, and there be that Diversity of Form in Walks which we have mentioned, their Number ought never to come into Consideration.



CH A P. IV.

Of T E R R A C E S.

AFTER the Consideration of Walks, comes properly that of Terraces; for though intended for the same Purpose, they do not come under that Denomination: their Character is their Height; and their singular Advantage is in raising the Eye above the ordinary Level, and opening to it a new Scene.

Throughout a Garden designed with this Taste, the Air will be clear and pure; but on this elevated Walk it will be finer than any where, because it is more open: there will from every

Part of the Ground be Prospects that are agreeable; but here the View is of a whole Country.

The first Choice is, that they be made in a Place where the View is extensive, and pleasing. We have seen the Taste for Terraces carried so far, that they have been made all round a Garden: in this case they are as absolute Walls, as if they had been built of Brick, and they confine and choak every Thing within.

There is seldom Opportunity for more than one

Sept. one Terrace in a Garden, nor does there often want the Means of that. It should be large like all the other Parts, and it must have Shade, for otherwise its Height makes it more than any other Part of the Garden exposed to the Sun.

Sept. The great Art is in chusing such a Place as affords the kind of Views we have described, and where it does not obstruct the Eye from other Parts of the Garden.



CHAP. V.

Of GROVES.

Nothing can be more essential to a Garden than this kind of Plantation; but there is nothing in which the common Practice more departs from Truth. Two Purposes should always be intended in these Plantations; an agreeable Object from without, and a Retreat from the Sun within. The first will depend upon the Choice of the Trees, and the other on their Disposition.

The Grove must have a Walk for the easy Enjoyment of the Shade; and Custom has made this Serpentine. That Form is indeed the best; but as there will be more Groves than one in a large Garden, it should not be invariable. Whatever be the Shape, the great Requisite is Extent.

The great Error is planting the Grove, in general, too close, and making the Walk too narrow: from this there is an unwholesome Air; and the Trees do not thrive well.

A third Part of the Trees usually allowed will be fully sufficient for this Purpose: their Branches will spread the farther, the more distant they are at the Root; and a very broad Walk will have sufficient Shade.

In this Case the Bottom may be always clean and hard; there will be free Air and sufficient Shelter. Flowering Shrubs should be planted to edge the Walk; and in this kind of Construction, they will thrive in a very different manner, from what is seen when they are choaked and over-shadowed universally: and it will give a great Air of Nature, if here and there along the Walk, an old Tree thrusts its Trunk beyond the formal Line of the Verge; or stands

even in the Middle, in a well chosen Place. The great Art is to give these Parts an Appearance of Nature, and nothing answers this Purpose like a well chosen Irregularity.

This internal Disposition understood, the next Point is the Choice of the Trees; considering the Grove as an Object from without. In this Sense it is a great Clump: and it is always the better for its Bigness.

Nature affords an endless Variety of Greens in the Leaves of Trees; and the same Tree at different Seasons of the Year puts on different Colours. The first opening is pale, the full Leaf has a more confirmed green, and the Period of Decay is yellow, or in some scarlet.

The Gardener must know all the Trees fit for such a Plantation, that he may be able to chuse the fittest; and he should be so far a Painter, that understanding what are the Colours, he may know also how to throw them together, so as to set off one another in their Perfection, and afford Variety in the Decay.

Good Painters in Landscape call Autumn the most agreeable Season, because of this Diversity of Colour in the decaying Leaves: it is one of those Beauties in Nature we can easily improve, by chusing for this Plantation such as have the finest Tincts, and the greatest Diversity of them.

The Out-line of the Grove should also be irregular, to imitate Nature, who never made a Wood square or oval; nor is the chusing of various Greens, and their Disposition, limited to this Article, but has its Place in all the Plantation.

C H A P. VI.

Of the Disposition of Flowers.

THE Flower Garden and the Pleasure Garden, though usually considered as the same, are properly distinct: we do not mean by this that Flowers should not be planted in Pleasure Gardens; but that there should beside this be a particular Piece of Ground for the Beds of the select Kinds. The Shelter they require, and their whole Management, is ill suited to the Disposition, Intent, and Air of such a Piece of Ground as we here speak of.

We shall now be understood with Regard to our Directions throughout this Work for the Culture of Flowers and curious Plants; we have directed them to be planted in distinct Beds, and in a Piece of Ground devoted solely for that Purpose, where Flowers are the only Object, and we seek nothing farther; this is the best Disposition.

The Pleasure Garden we describe in this Place is of another Kind, Flowers will be a great Ornament

to it, but they must not be considered as the principal Object; nor must the rest of the Disposition be subservient to them.

The finest Kinds that bear the open Ground must be planted here with the same regard to Light and Shade, Harmony of Colours, and Variety, that we have recommended in the Choice of Greens for the Grove: and as the Variety is vastly greater in this Case, Fancy has more free Scope.

True Lovers Knots of Box are banished, with clipped Yews, and Holly Pyramids; nor is the plain strait Border the proper Form for the Flower Ground. No Edge becomes a Flower-piece like that of the Grass Walk, and they never appear so well as when they follow Meanders, and rise in little Clumps and Clusters. This modern Taste has found, and there is nothing in the Article of Gardening, which does it so much Honour.

C H A P. VII.

Of W A T E R.

BESIDE the Necessity of Water for the Service of the Plantation, we have observed that it holds a high Rank in the Consideration of Embellishment. We have said, that if the Piece of Ground can be so chosen as to have a Brook or Rivulet at the Bottom, or a rising Spring toward the Top, it will be a vast Recommendation; either of these will be a Source of great Satisfaction; but in the first Case Nature in a manner has done all, in the other it is left to Art.

All standing Water is a Blemish rather than a Beauty in Gardens, but from the smallest Current ingenious Art can form Basons and Falls, clear Streams and Cataracts at its Pleasure. The Descent of the Ground will give the more Opportunity for these Improvements: running Water gives a Coolness to the Air, and its murmuring

Sound has Charms in the Moments of Contemplation.

Art has been used to dispose it in the most fantastick Forms, but a true Taste will prefer the most simple running Brook to all the Fountains that were ever crowded into a Garden. What Art may be permitted to do with it, is no more than to imitate what is elsewhere seen in Nature. Whenever the Designer goes beyond this, he loses Sight of the great Rule which is the copying of her Works: and he will fall into affected Puerilities.

This is the plain, simple, and natural Taste to be indulged in designing Gardens: thus the most pleasing have been formed; and there is no Way else to command sensible Applause.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER LII.

For the second Week in *SEPTEMBER*.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. DROOPING SHRUB XERANTHEMUM.

Sept.
Pl. 52.
Fig. 1.

THIS very elegant Plant is little known among the Botanists, and has led the very best of them into Errors.

COMMELINE, who first in *Europe* raised it from Seeds brought from *Africa*, ranging it among the *Asters*, called it *Aster Africanus frutescens splendens parvis & reflexis foliis*; and so it has been named by others after him. LINNÆUS, in one Part of his *Species Plantarum*, p. 877. has joined it with the *Asters*; but he had more justly, many Pages before, 859, refer'd it to the *Xeranthemum*, with the Addition, *Caulibus frutescentibus provolutis foliis ciliatis hirsutis*: shrubby *Xeranthemum*, with drooping Branches and hairy ciliated Leaves.

The Root is long, woody, and spreading.

The Stem is woody but slender, weak, and brown; scarce able to support its own Weight, yet loaded with innumerable Branches: these droop, and often lie upon the Ground, and throw themselves about in various elegant Manners.

The Leaves are innumerable; they cloath all the Stalks from Top to Bottom, and they are short and small, but elegant. They have no Footstalks, they hang drooping, and are bent every where from the Branches.

Their Colour is a deep, elegant, and shining green, and they have an Edge of stiff Hairs all round them: this is what the botanical Writers call ciliated, from the Resemblance of Eye-lashes; there are also a few Hairs upon the other Parts of

Numb. LII.

the Leaves, but less conspicuous.

The Flowers are extremely singular and beautiful; only one terminates every Branch, but these are so numerous, and thrown about in such odd Directions, that the Quantity of Flowers is very considerable; and their Disposition on the entire Plant singular and elegant.

These numerous Flowers appear also of various Colours according to their Position and Degree of Maturity; the upper Scales of their Cups are the most conspicuous Part; they are long, and flatted, and have the Aspect of Rays of a Flower, these are purplish on the outside, and white within; and this Purple is strongest in them before the Flower opens: consequently the Buds are of a deep purple. The half open'd Flowers on the outside are of a paler Hue; and the full blown ones retain enough of the Tinge upon the Back of this Part of the Cup to be very elegant.

These Flowers in their various States of Maturity shew themselves variously and elegantly by the bending, drooping, and winding of the Branches; and more by their Motion from the least Breath of Wind: there are purple, globular Heads, which are the first Buds of Bloom, and all the other Tinges as the Flowers shew more or less of the back Part of their Petals: this, with the glittering green of the Leaves, and the whole Disposition of the Plant affords an Appearance scarce to be equalled.

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Sept.

Sept. The Inside of those extream Leaves of the Cup is white, and the Disk or Body of the Flower is yellow.

The Student will find a great deal in its Construction, worthy of his Attention.

It is of the composite Kind, formed of a Multitude of tubular Floscules, and surrounded by these seeming Rays, which preserve them.

The general Cup is rounded, large, and formed of many Series of Scales placed in the Manner of Tiles over one another.

The inner Series, resembling Rays, are thinner than the rest, and are of a glossy Surface: these have so much the Appearance of Petals, that they mislead COMMELINE, and for a Time imposed upon LINNÆUS; and they are arranged in the same Manner as the Rays of the *Aster*, and like Plants round the Disk.

This is composed of two Kinds of Floscules, the Body of it of tubular, and the Verge of a single Series of others tubular also, but less regular. Those in the Centre of the Disk are of a Funnel-like Shape, and cut into five expanded Segments at the Rim. Those on the Verge are tubular, less expanded at the Rim, and cut into five less equal Segments. Those in the Body of the Disk have five very short Filaments with oblong tubular Buttons; and in the midst of these, from a short Rudiment of a Seed, rises a fine slender Style, exceeding the Filaments in Length, and terminated by a split Head.

These Floscules therefore are hermaphrodite, containing male and female Parts, and the others at the Verge are only female; they have no Filaments or Buttons, but a regular Rudiment of a Seed as the others, and a single Style from it, with a divided and large Head, the two Parts of which turn back. After the Floscules are faded, the Cup remains; defending the Seeds: these ripen equally after the hermaphrodite and female Flowers.

The Class of the Plant is found in the Coalescence of the five Buttons into a Cylinder; this is the known Character of the *Syngenesia*, and as the hermaphrodite Flowers ripen their own Seeds, the Impregnation of those in the Female

is seemingly unnecessary; the Order therefore to which it belongs, is that of the *Polygamia superflua*. Sept.

Culture of this XERANTHEMUM.

It is a Native of the *Cape of Good Hope*, where it thrives best in those Veins of Earth which fill the Cracks of Rocks: from whose abrupt Summits and irregular Sides it hangs eight, ten, or twelve Foot in Length; covering them with its most resplendent Verdure, and displaying its Beauties in a Way we cannot see them here, as the Winds toss about the long loose Branches, fixed only by their remote Root. With us it may be preserved in a Greenhouse, but never thrives perfectly unless it be allowed the Benefit of a Stove.

The best Way of propagating it is by Seeds, but they do not ripen well in *England* unless with great good Management. If they can be obtained from the Cape, they are to be sown in a Pot of fine Mould in Spring, and the Pot is to be set up to the Rim in a Bark-bed; after this they are to be treated with great Care, Waterings and Air must be occasionally allowed, and the young Plants must be thinned till only four or five are left in the Pot: they must be transplanted at a due Size into separate Pots, and thus brought into the Stove.

The familiar Way of raising it is by Cuttings; these are to be had wherever there is a Plant, and they will freely take Root. The middle of *June* is the best Time for this, and the Cuttings must be planted in Pots of fresh Mould, and set in a Hot-bed; or raised among other tender Kinds in the Manner we have before described, on a Kind of Hot-bed covered with Hoops and Canvas.

Which ever Way be chosen, the Management must be the same. The young Plants must be watered and shaded till they have taken good Root, and then they must by Degrees be hardened a little to the Air, and afterwards planted out into separate Pots. These must be shaded till the Plants are well rooted, and then removed into the Stove.

2. YELLOW AFRICAN SHRUB TREFOIL.

Pl. 52. This is a very elegant Shrub, covered with
Fig. 2. Leaves on its innumerable Branches, and on the Head or general Surface formed by the Tops of the Branches, crowned with Tufts of golden Flowers.

The earlier Botanists were not acquainted with it: COMMELINE, who first raised it in the *Amsterdam* Garden, named it *Trifolium Africanum fruticosum foliis incanis flore luteo*: African Shrub Trefoil, with hoary Leaves and yellow Flowers; and others have, in general, continued it unaltered.

The Root is woody, large, and spreading: the Shrub, with good Care, rises to a Yard in Height, and sends out every where a Multitude of wild Branches. The main Stem is hard, firm, and

covered with a purple brown Bark, the Wood is whitish. The young Shoots are tender, of a pale, greyish green, and covered with a little Hoariness.

The Leaves stand thick upon them all. They are properly and regularly disposed in Threes, and so they stand upon the lower Parts of the principal Branches; but it is there alone one can distinguish that the Shrub is a Trefoil. From the Bosoms of these ternate Leaves rise Clusters of young ones without Order or Regularity; and in the same Manner all along the young Shoots and tender Branches the Leaves are placed wildly in Pairs alternate, or in the most loose and scattered Manner.

They are oblong, narrow, undivided at the Edges,

Sept. Edges, sharp-pointed, and fixed to the Branch without Foot-stalks. Their Colour is a greyish green, and they are dusted over in the same Manner as the young Branches, with a fine light-grey Powder.

The Flowers stand in Clusters at the Extremities of the Branches, but often the upper Leaves rise above them, which adds not a little to the Beauty of the Plant. They are large, thick set together, and of a fine gold yellow. The whole Shrub is covered with them, and when they are in the Bud, as well as when in full Flower, they are extremely pretty. The Buds before the Flowers begin to open, terminate the Stalks and Branches in round thick Heads of a silvery Whiteness: the weaker Branches often droop with them.

The Flowers when they burst forth, afford a new and much more elegant Appearance; they are of the papilionaceous Form, and throw themselves more freely and elegantly open than almost any of the Trefoil Kind.

The Cup is formed of a single Piece, and is tubular, and at the Verge is cut into five Segments. The Body of the Flower has its three regular Parts, Vexillum, Alæ, and Carina.

The Vexillum is broad pointed at the End, and turned back; the Alæ are short and turn up; and the Carina is shorter yet, and turns up with them.

Within the Flower are ten Filaments, nine of which unite at their Basis into a Body, and the tenth is loose: these are all crowned with simple Buttons. In their Centre appears a simple slender Style from an oval Rudiment of a Fruit; this turns up as the rest, and is terminated by a roundish Head.

The two Assortments of the Filaments shew the Plant to be one of the *Diadelphia* of LINNÆUS, and their Number refers it to the *Decandria*: this being in that Class the Mark only of a sub-

ordinate Distinction, which is in others the great Character. Sept.

Culture of this TREFOIL.

The Plant is a Native of *Africa*, where it covers the wild, poor, and rocky Hills, as the common Furze with us; spreading as it were a golden Carpet over them, for the Extent of many Miles. With us it requires to be sheltered from the Severity of Winter, but will very well bear to be set out in Summer in a warm and favourable Exposure, and may be treated as the other Greenhouse Plants.

The best Way of raising it is by Seed, but there is great Uncertainty of their ripening perfectly here, so that if they cannot be obtained from its native Country, 'tis better to trust to Cuttings.

These should be taken in *July* from the most healthy Branches of a vigorous Shrub, and raised among those of other Kinds upon the Bed we have directed to be made at that Season for this Purpose, with Dung underneath, and with a Defence of Hoops and Canvas.

When by frequent Watering and Shade they have been brought to Root, they must be taken up and planted separately in Pots, taking up a good Ball of Earth with them, and watering them carefully as well as shading till they have taken Root. After this they are to be set in the same Place with the other Greenhouse Plants, and housed with them in Autumn.

They will flower the second Year; and all the Caution that need be given the Gardener is, that he leaves them to Nature in their Growth. The more Branches they throw out the better, and the Wildness of their Form should be encouraged rather than retrenched, for it is their proper Beauty.

3. GOLDEN CUDWEED.

Pl. 52. LINNÆUS has reduced this Plant to the
Fig. 3. humbler Class of *Cudweeds*, which those who wrote less correctly called by the sounding Name of *Elichrysum*. In this BOERHAAVE and COMMELINE had agreed, and they were Authorities Men could not blush to follow.

BOERHAAVE named it *Elichrysum Africanum folio oblongo tomentoso, caulem amplectente, flore luteo*: yellow African *Elichrysum*, with an oblong, woolly Leaf, embracing the Stalk; and COMMELINE, *Elichrysum Africanum latrifolium fœtidum capitulo aureo*. LINNÆUS, having better fixed the Distinctions of Genera in the *Syngenesious* Class, refers this to the *Gnaphalium*, and adds as the Distinction of the Species, *Foliis amplexicaulis spatulatis ramis patentibus corymbis aggregatis*: Cudweed with spatulate Leaves surrounding the Stalk; and spreading Branches crowned with cluster'd Heads.

The Root is long, and furnished with innumerable Fibres.

The Stalk is thick, round, firm, white, and woolly; and rises to two Foot in Height, spreading every Way innumerable Branches, which stand wide, loose, and scattered.

The Leaves are large, oblong, and of the same woolly Aspect with the Stalk. They surround it at the Base, and they are broadest toward the middle, waved at the Edges, and obtuse.

The Flowers crown the Extremities of all the Branches, and on the principal of them form large and handsome Heads. They are of a very delicate yellow, bright and shining, and have the additional Value of being very lasting. The common Cup is rounded, large, and composed of Scales of an oblong Shape, lying loosely over one another; and the upper one standing more

Sept. more free than the rest. The Flower is of the composite Kind, and is a Disk, to which the upper Scales of the Cup serve as Rays.

The Floscules composing this are numerous; their Form is tubular, and they are cut into five Segments at the Rim, which turn back.

The Filaments on each Floscule are five; and they are short and crowned with long coalescent Buttons, forming a hollow Cylinder.

In the Centre of these rises a single Style of the Length of the Filaments, crowned with a split Head. This takes its Origin from the Head of a coronated Seed, and that afterwards ripens in due Time.

Among these appear certain single Styles; they rise naked from Rudiments of Seeds, without Petal or Filaments; these it is the Custom of Botany to call Female Flowers.

The composite Kinds in general, have two Kinds of Flowers, Hermaphrodite and Female, but this is an uncommon Disposition: it is customary for the Hermaphrodite Floscules to occupy the whole Disk without Mixture; and for the Female to surround the Edge in Rays.

The Class of the Plant is to be traced in the Hermaphrodite Floscules. The Buttons in these coalescing into a cylindrick Form, speak it one of the *Syngenesia*. These and the Female Flowers both ripen Seeds, wherefore the Plant belongs to that Order, which comprehends those in which the

various Impregnation is not necessary, the *Polygamia superflua*. Sept.

Culture of this CUDWEED.

The Plant is a Native of *Africa*, and thrives there in light, deep, and mellow Soils, where there is some Moisture. The Sides of Brooks which run under the Verge of Forests, is its most fragrant Situation. With us it requires the same light deep Mould, and will live through Winter in the well sheltered Borders of the Garden.

Mix equal Parts of Pond Mud and Garden Mould, and dig this in two Spades Depth in some small Spot which has a sheltered Situation.

On this sow some of the well ripened and well hardened Seeds. They must be sown here, not in a Nursery, because the Success of the Plant depends upon its not being removed.

When the young Plants appear they must be thinned to a Foot Distance, and from this Time weeded and watered.

April is the best Time of putting the Seeds into the Ground, and they will flower late the same Summer, but they will not come to their full Perfection till the succeeding Year.

After this there should be a fresh sowing every Season, for the Plants are never so beautiful as the first Time they come into full Flower.

4. NARROW LEAVED HEBENSTRETIA.

Pl. 52. This is a very pretty *African* Plant, easily raised, and making a pleasing Variety. The old Authors were not acquainted with it: those who first raised it in *Europe* referred it to the *Valerian* Kinds; and COMMELINE to the *Valerianellas*: he calls it *Valerianella Africana fruticans foliis longis & angustissimis*: shrubby stalked *African Valerianella*, with long and very narrow Leaves. Fig. 4.

The later Writers refer it to the new established Genus *Hebenstretia*, of which we have in a preceding Part of this Work described another Species, with indented Leaves; from which this is distinguish'd by the Name *Hebenstretia foliis integris*: undivided leaved *Hebenstretia*.

The Root is brown, long, and spreading.

The Stem is woody, but does not exceed fifteen Inches in Height; it is divided into many Branches. The Bark is brown upon the lower Part, but the young Shoots are green.

The Leaves stand irregularly, and in great Numbers upon the Branches: they grow obliquely upright, and form a kind of absolute Covering for them of considerable Thickness; they are oblong, very narrow, and adhere to the Branches without Footstalks. Their Colour is a fresh and fine green.

The Flowers grow in long regular Spikes at the Tops of all the Branches, and are small and white.

Each has its Cup small, but particular in Structure: it is formed of one Piece divided into two Lips, and tubular at the Base. The upper Lip is small, narrow, and erect; the under longer and bent down.

One Petal forms the Flower: it is tubular at the Base, and at the Top cut into four Parts: these make a kind of upper Lip, the lower Lip of the Cup serving in the Place of a lower.

The Filaments are four, and they rise from the two Sides of the lower Part of the Flower; two of these are shorter than the others. The Buttons are oblong and lateral. The Style is single, and has a fine small Head; and there follows an oblong Seed-vessel containing two Seeds.

The Class is found in the different Length of the Filaments. The Student has been told already, that when two of these are longer than the others, the Plant is one of the *Didynamia*: he will remember also that the Subdistinction into Orders, is in this Class founded upon the Condition of the Seeds, whether they be naked or covered. In this they have a Capsule, and the Plant is therefore referred to the *Angiospermia*.



Sept.

Culture of this HEBENSTRETIA.

It is a Greenhouse Plant, and requires a dry Soil. In this it may be raised from Seeds, or Cuttings; but the former in this, as in all other Cases, is the better Method.

Which ever is chosen, the Soil should be the same, fresh Mould from a hilly Pasture, with a Mixture of Wood-pile Earth and clean Sand, of each one fourth the Quantity of the Mould.

The Seeds are to be sown in a Pot of this, and raised by the Help of a Bark-bed; as we have directed on former Occasions; and when the Plants are large enough to be taken up, each must be planted in a Pot of the same Mould, and again set up to the Rim in the same Bed till well rooted: then they must by degrees be hardened to the Air, by admitting it in the Middle of the Day; and when they can bear it, they must be set out among the Greenhouse Plants, and housed with them in Winter.

The second Year they will flower; and if all the Branches are permitted to grow as Nature throws them out, the Plant will form a very pretty Bush, and be covered all over the Top

with Flowers. These have a Singularity about them, which never fails to attract even the unaccustomed Eye; and gives a Variety beyond most others.

The other Way of raising it by Cuttings is easy, and with due Care will furnish very pretty Plants.

The Season for this is *July*, and we have before directed the Gardener at that Time always to have two Beds prepared for the Purpose of Cuttings; one for those of hardier, the other of the tenderer Kind.

The Cuttings of this *Hebenstretia* should be planted in the latter Bed, which has a Quantity of Dung under it, and a covering over.

They should be the Shoots of the same Year, and they must have good Watering. If the Mould be well closed about them at first, this will soon give them a Tendency to rooting; and with the Advantage of the Shelter of Canvas drawn over the Hoops, they will be so well rooted in seven Weeks, that they may be taken up and planted in separate Pots. These must be set under the same Shelter till they are well established; and then they are to be placed out among the Greenhouse Plants.

Sept.

5. YELLOW OCCIDENTAL CASSIA.

Pl. 52.
Fig. 5.

This will require some Care in the Gardener to bring it to flower in Perfection, but there is Elegance enough in its Appearance very well to return the Attention.

The old Authors could not be acquainted with it, for it is no where native except in the *American* Islands, and chiefly in the hottest of them.

COMMELINE calls it, *Sena spuria occidentalis* *odore opii viroso orobi Pannonici foliis mucronatis glabris*: bastard Sena of the *West Indies*, with Leaves like the *Hungarian Orobus*, smooth and pointed, and with an offensive Smell resembling that of Opium.

LINNÆUS, who banished all idle Distinctions, refers this to the *Cassia* Kind, to which also by its Characters the Tree Sena palpably belongs; and adds as the Distinction of the Species, *foliis quinque-jugatis, ovato lanceolatis, margine scabris, exterioribus majoribus glandula baseos petiolorum*: *Cassia* with Leaves of five Pairs of Pinnæ, which are of an oval lanceolate Form, rough at the Edges, largest outward, and have Glandules at the Base of the Footstalks.

This is a long Name; but the Student will understand the Reason, when we have told him the Genus *Cassia* comprehends a great Number of Species.

When a Genus consists of one Plant, the single Name is sufficient; when of two, an Epithet of Distinction is to be affixed to each, shewing the Character by which they differ: when there are no more than two, one Word will usually con-

N° 52.

vey this Character, and sometimes when there are more; but, in general, as the Number of Species increases, the Distinction becomes more complicate, and each must be characterized by a Name consisting of more Words. This LINNÆUS has found necessary on all such Occasions, and he has executed it with sufficient Care and Accuracy.

The Root is woody, long, and spreading.

The Stem is tolerably firm, upright, and divided into many Branches: the Bark on the main Stem is olive coloured, spotted with brown, and full of rising Warts or Protuberances. Nor is this all its Irregularity; for there run downward from the Footstalks of each Leaf, also two Ribs of a paler Colour.

The Leaves are numerous, and of a fresh pleasant green. They are in a great measure irregular, for Nature indulges in her Wildness in their Composition; but toward the upper Parts of the Branches, there are usually several perfectly formed. These always consist of five Pairs of Pinnæ, with an odd one at the End; but the several Pairs do not stand regularly opposite to one another.

The Uncertainty in the Formation of these Leaves is so great, that sometimes the extream Pinna is wanting; and in others, the rest are disposed so wildly, that they seem independent of one another; and look like so many Leaves on a Branch, not so many Parts of one Leaf upon a common Footstalk.

The Flowers are large and beautiful; their

7 S

Colour

Sept. Colour an elegant yellow. Each has its slight Cup formed of five loose Leaves, hollow, coloured, and of short Duration.

The Body of the Flower is formed of five Petals, and these are large, rounded, hollowed, and somewhat irregular; the two lowest in each Flower being larger than the others, and more open and distant.

In the Centre stand ten Filaments; they are long, slender, drooping, and of various Lengths and Construction. The three uppermost are shorter than the others; the three lowermost longer; and the three lowest Buttons are much larger than the others, and of a hooked Figure. They have each a Beak, and they split at the Top.

The four Side Antheræ, or Buttons, have no Beak, and they also split when ripe; the three upper ones are distinct from all these, very small, and scarce perfect, or filled with the Farina. This is very singular in the Character of the Cassia, but all the Species of that Genus are alike in it. The Disproportion does not affect the Class of the Plant; that is found from the Number of the Filaments; and as they are ten in Number, it is the *Decandria*, the tenth in the *Linnean* System.

The Style is single and short; it rises from a long Rudiment of a Fruit, fixed upon a Footstalk, and is crowned with an obtuse assurgent Head. This single Style refers it to the first Order under the tenth Class, the *Monogynia*.

The Seed-vessel is an oblong Pod divided into several Partitions by transverse Plates, and it contains numerous round Seeds.

Culture of this CASSIA.

Sept.

It is found in those warm Parts of the World where native, in deep mellow Earth, where there is some Moisture. With us it never thrives so well as in a Stove; but, with good Management, it will live exposed in Summer among the Greenhouse Plants, and only sheltered with them in Winter.

The Method of raising it is from Seeds, or Cuttings; and either Way it requires the common Management with those Plants whose native warm Climates make them tender here.

The Seed, if that Method be followed, should be obtained from *Jamaica*, or some other Place where it is perfect; and sown early in *March* upon a common Hot-bed of Dung with other tender Plants.

The young Plants must be removed to a second Hot-bed, when the rest from the same Bed are transplanted; and after this, when they have got three or four Inches in Height, they must be transplanted into separate Pots. These must be set under a Frame, and shaded till the Plants are well rooted; and after this removed either into the Stove, or into the Place where the Greenhouse Plants are kept, according to the intended Management.

When the Method by Cuttings is preferred, it must be done in the Manner directed for those of other tender Plants, and at the same Season.

The Cuttings must be of that Year's Growth; the Bed must have Dung underneath, and an arched Covering. When the Cuttings are well rooted, they must be planted into separate Pots, and set in the Stove, or out among the Greenhouse Plants as the others.

6. THREE FORKED SANTOLINA.

Pl. 52.
Fig. 6.

This is another of those elegant *Africans* which furnish our Greenhouses and Stoves at once with Variety and Beauty. The old Authors did not know it; and *COMMELINE*, who has elegantly figured and described it, calls it by another Name: he ranks it with the *Coma Aurea*, and calls it *Coma Aurea Africana fruticans foliis glaucis & in extremitate trifidis*: shrubby *Coma Aurea* with blue, green Leaves, divided at the End into three Parts.

VAN ROYEN and *LINNÆUS* refer it to the *Santolina*; and the latter distinguishes it from the numerous other Species of that Genus, by the Addition of *Corymbis simplicibus fastigiatis foliis trilobis cunei-formibus*: *Santolina* with simple Clusters at the Tops of the Stalks, and with wedge-like Leaves divided into three Parts. This Name very happily expresses the Form of the Leaf, which is oblong, broadest and trifid at the Extremity, and smaller to the Base.

This is the Sense of the Term *Cunei-form*,

wedge-like applied to a Leaf; the Length is greater than the Breadth, and it grows smaller from the Extremity to the Base.

The Species of *Santolina* are very numerous; but this Form of the Leaf, with the three Divisions at the Extremity, is a Character found in no other.

The Root is woody, divided into many Parts, and spreading.

The Stem is woody, two Foot or more in Height, and divided into numerous Branches.

The Bark is brown, the young Shoots are of a pale silvery grey, and the whole Shrub, when suffered to grow in its natural Wildness, is very elegant.

The Leaves are of a pale blueish, or greyish green, and have the same silvery Aspect with the young Shoots. They have no Footstalks, but adhere to the Branches by their narrow Base, and stand irregularly.

The Flowers are numerous, and crown the Branches

Sept.

Branches in broad Clusters. Their Colour is a perfect gold yellow; and with the silvery or pearly Hue of the young Shoots and Leaves, it forms a fine Contrast.

The Flowers are of the composite naked Kind; that is, they are formed of little Floscules cluster'd together in a common Cup, but not edged by Rays.

These Flowers which others call composite and discoide, LINNÆUS calls, in general, aggregate. That Term he uses in Distinction from simple Flowers. These are such as stand single in their Places, and have their proper Organs distinct.

The Aggregate are such as stand clustered in little Heads, and have some part of the impregnating Organs serving in common.

The Cluster in the Cup is in this Case understood as the Flower; and these small Flowers, of which it is composed, are named Floscules.

This is the Condition of every aggregate Flower, and these LINNÆUS subdivides under several Heads, of which one is the umbellate, which has the Flowers supported on Footstalks, all rising from one common Point at the Head of the Stalk. To this Kind the present *Santolina* belongs, and this will lead the Student to understand that Distinction.

The Class of the Plant is to be sought in the Condition of the Floscules.

The Cup that contains them is of a half round Form, and is composed of oblong and somewhat oval Scales, which lie over one another, and are pointed and bent inwards.

The Floscules exceed the Scales of the Cup in Length, and are numerous, and all alike; surrounded by no Rays, nor intermixed with distinct Female Flowers.

Each is formed of one Petal, and is tubular; widest at the Mouth, and there divided into five Segments which turn back.

Five very short and very slender Filaments are placed in each Floscule; and on these are as many long Buttons, which coalescing, form a

Cylinder. This determines the Class of the Plant, it shews it to be one of the *Syngenesia*, to which Class also the Generality of the aggregate Flowers are to be referred.

The Style is single, and of the Length of the Filaments; and it rises from an oblong Rudiment of a Seed, marked with four Ridges, which give it a square Appearance.

Every Floscule ripens its Seed; and though their Buttons mutually impregnate the Rudiments in one another; each could subsist and perfect the Seed alone: this refers the Plant to that Order, under the *Syngenesique* Class, which LINNÆUS has distinguished by the Terms *Polygamia equalis*.

Culture of this SANTOLINA.

It is a Native of the *Cape of Good Hope*, where it grows most favourably, in rich Soils, by the Sides of Woods, where there is some Shelter, and where the Ground is not too dry.

This should lead us to its Culture. A Compost made of equal Parts of Garden Mould, and Pond Mud, with a little Cow Dung well rotted, will very well supply the Place of its native Soil; and to have it in the full Perfection, we should allow it the Stove Heat: but it is not confined to that degree; for where there is a good Greenhouse for Winter shelter, it may be very well preserved without.

The Seeds sometimes ripens with us, and it may be raised from them: but it is not worth while either to run that Hazard, or take the Trouble of sending for them from the *Cape*; for it will grow freely from Cuttings.

The Season for this is some Time in *July*; they should be taken from vigorous and healthy Plants, and planted in the Bed made up at that Time with Dung for the tenderer Kinds.

The Method is to be the same with that we have just directed, and there needs no new Rule for this.

SECTION II.

Of the making of GRAVEL WALKS.

WE have in the two preceding Numbers given Directions for chusing a Spot of Ground for a Garden, and disposing it in a regular Manner. We have there gone through the general Consideration of a Garden, and are here to descend to Particulars: of these Gravel Walks are first to be considered, their Advantage being such as nothing else can supply, and the Pleasure of them depending in a great measure on their first Construction.

The Advantage of Gravel and Grass is in a manner peculiar to the *English* Gardens, and it becomes us to make the most of our natural Benefits.

We must admire the Taste of LE NOTRE in the Royal Gardens of *France*; but while we do him the due Honour for their Disposition, with what Concern do we look upon such Walks laid in loose Mould, and such Plantations without Verdure between. The great Part of a Garden must necessarily fall under the Articles of Grass and Gravel, and in these we are qualified to excel all the World: but so little Care is taken in many Places of them, and so little is known of them in others, that we see Turf in expensive Gardens of our own, which would disgrace those of less happy Countries; and Gravel, upon which it is worse walking than on the Alleys of a Kitchen Ground.

C H A P.

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C H A P. II.

Of the Choice of GRAVEL.

TO have good Gravel, the Walks must be laid with Judgment; and as this is the Care in new Gardens, it will always be worth while to take it up, and new make the Walks in old ones, where they are found bad. Tho' we are famous in *England* for fine Gravel; yet we have also such as is bad; and there will a great deal of the future Success depend upon the Choice in this Article.

Gravel is a Collection of small Pebbles and Flints with more or less of a clayey Loam among them. We have Pebbles in vast Masses with none of this Loam, but they do not properly constitute what is called Gravel; they will never lie firm in a Walk, neither is their Colour agreeable.

Putney Heath abounds with these; and there are Garden Walks at *Putney*, and in other near Places, laid with them, but they have a dull dingy Aspect; the Pebbles lie loose with Hollows and Gaps between them, and the Walks have not the Appearance of Gravel. A great deal of rolling answers very little Purpose, they will never lie firm, and it is always troublesome to walk upon them. This is one Extream in the Nature of Gravel; and such is found in many other Places as well as that just nam'd: on the other hand we have Gravel in which the Loam is too abundant; and this makes Walks grow wet in the least rainy Season, and are dirty to the Feet: neither do they lie firm unless in dry Weather, and with very good Management.

A Gravel should be chosen which is of a middle Quality between these, neither with too little nor too much of the Loam; nor is this all: the Loam must be of a good Colour, or the Walks will never be agreeable to the Eye; and there must be Flints as well as Pebbles, or it will not form a compact Body.

We have Gravels in which the Loam is brown, and others in which it is of the Colour of rusty Iron; both these are very disagreeable. What we expect in a Garden Walk is a clean yellow; and this depends most of all upon the Colour of the Loam in its Composition.

The Use of the Flints is very evident, Pebbles are round or nearly so, and a Parcel of round

Bodies are not likely to roll into a firm Walk; the Flints, on the contrary, are in Fragments of all Shapes and Sizes; these fill up the Hollows; and make the Loam lie in smaller Parcels, and better distributed. By this the Gardener will know what Kind of Gravel he is to take; and he will see the Reason.

It must be such as has a good Quantity of Flints among the Pebbles, and a moderate Proportion of a yellow Loam: this, when well managed, will bind like a Rock, and it is this which has given us the Credit of the finest Walks in the World. If it happens that there is not any Gravel answering this Description in the Neighbourhood of the Place, the Gardener must be at the Pains to mend such as there is, by an Addition of what it wants. If it consists only of Flints and Pebbles, let him mix up some yellow Clay and Sand into a Kind of Loam, and work this well with it: if there be Sand loose among the Pebbles, let him add only Clay.

There will require a great deal of Labour to mix up a due Quantity of this well; but when it is done, the Work very well answers the Charge, for it will be equal to any natural Gravel: a little Lime may be very properly added to these Gravels in the working up, and will make them bind the faster, but the Quantity must be small, or it will give them a crumbly Hardness, or impair their Colour; the People who dig Gravel, sift it in several Degrees of Fineness; but for Walks nothing more is required than taking out a few of the largest Stones; for all small or all large Gravel will never answer so well as that which is mixed as we find it in Nature. In the large, when all the small has been skreened from it, there will be Crevices and Hollows too open; and on the contrary, the small, when this is separated, will be too soft. The large, like Ballast on the Roads, will want Loam, and the small will have too much of it: for in a Manner all the Loam will run through the Skreens. Therefore where these have been injudiciously separated, the only Thing to be done properly, is to mix them again together.

C H A P. III.

Of laying the WALKS.

A Good Gravel being chosen, and the Place and Breadth of the Walk marked out, the next Consideration is the laying it.

Let the Gardener observe what he sees amiss in

the Walks of others, and mend it in these he has now an Opportunity of making from the Beginning.

He will find that Weeds are a continual Deformity

Sept. formity to the Walk, and a Torment to the Gardener: and that all his Cleanliness will not keep this Walk of a good Colour, unless some Prevention be used against Worms. The Weeds of the worst Kinds will be prevented by a good Bottom; and the Worms entirely.

Therefore the Space of the Walk being cleared, let him bring in a Quantity of Lime Rubbish, so much as will cover it five Inches; and spread this even. Upon this let him throw on the Gravel in such Quantity as will cover it, when regularly spread a Foot deep.

Less than this will do, and those who grudge the first Expence, may content themselves with about eight Inches; but 'tis best to lay on enough at once, and a Walk thus bottom'd and thus covered, will not be liable to any of the common Accidents, but will keep good for a Person's Life, with the common Care.

With Regard to the Form of Walks we are, as on all other Occasions, running from one Extreme to another, equal faulty.

Our Fathers, not considering the Discharge of Water, laid their Walks of Gravel flat, and as the principal Track of Feet was in the middle, they soon became lowest in that Part: the Consequence was, that every Shower of Rain made a Puddle along the middle of the Walk.

This they contrived to remedy in a very awkward and expensive Manner, by opening Drains underneath, and giving Vent by Stones pierced with Holes at eight or ten Foot Distance.

It soon after came into their Thoughts to supply the Place of this ill-looking and chargeable Contrivance, by rounding the Walks; and this is, where kept in due Bounds, the true Method: but we now exceed those Bounds, and destroy the very Intent and Purpose of our Walks, by laying them so high in the middle, that a Person can walk upon no Part of them without Pain.

A flat Surface is the natural Form of Earth on which the Foot should tread; and on the other hand every Walk ought to be a Segment of a Sphere, or otherwise the Water will lodge upon it: but to accommodate this to its Use, at the

same Time that it is kept dry the Sweep must be very little.

We see an Instance of the bad Practice of rounding the Walks too much in some of the publick Places of Resort: the Proprietors, finding how much they lost by their Walks continuing damp several Evenings after Rain, have laid them so high rounded, that no Wet can lodge upon them. They are never damp, but the Feet are put in Pain every Step, and the Ancles strained with walking upon them.

These Extrems let the judicious Gardener equally avoid. The Rise in the middle should be such that the Eye may just perceive it, and the Feet not perceive it at all. A Walk with a little Rounding is more agreeable to look upon than one that is perfectly flat: but any thing more than this is offensive; it gives a Narrowness, and an unnatural Shape. The Eye is a Judge of what is fit for walking before the Feet are brought upon it, and nothing looks well that is not suited to its Use.

In a Gravel Walk, of twenty-five Foot broad, let the Gardener allow a Rise in the middle of five Inches, and in the same Proportion whatever be the Breadth of the Walk. He will perceive that this is easily reduced to Measure, for it is the Allowance of one Inch to every four Foot, and this should be the Proportion as well in a four Foot Walk as a forty Foot. It is sufficient to relieve the Eye from the Fatigue of looking upon an absolute Flat, and it answers the Purpose of throwing off the Rain: this is all the Benefit expected from the rounding of Walks; and the Proportion we have named, at the same Time that it gives this, is not in the least troublesome to the Feet.

The best Time for making Gravel Walks is in Spring, so that all the Gardener can do now, is to mark out their Places, pare off the Surface so far as necessary for laying the Bottom, and fix upon his Spot of Gravel. It will be fit also, if in Time he see that Lime Rubbish shall not be wanting; for in the making a large Garden, there will be no small Quantity required for the Bottoms of the several Walks.

CHAP. IV.

Of making and keeping the WALKS.

THE Gardener, having every Thing in Readiness, is to begin this Work of making the Walks at the latter End of *February*. The Height of the several Parts must be marked by Stakes, and these should be fixed even before he begins to throw in the Rubbish; it is thus every Thing will be conducted with Regularity.

Let the Rubbish be thrown in Heaps at small Distances, proportioned to the Thickness it is to lie, and then be spread and laid in the same round-

ing Form that the Gravel is to lie at last; but not rolled: the Walk in Rubbish must be of the same Form that it is to have entire; but if it be rolled; as some People practise, the Gravel does not blend with it. There will be in that Case a Bed of Gravel upon a Bed of Lime, but the Intent is, that they should unite and form one Mass.

The Gravel must be thrown on as soon as the Rubbish is spread, and it must be spread in the same

Sept. same Manner, but with yet greater Regularity.

The Method is not to spread a thick Coat at once, but to throw it in thin Parcels one over another; and in this Manner let the Walk be laid three Inches higher than it is intended to remain.

The Thicknesses of Gravel and Rubbish we have allowed already, being used, it will be pressed down as much as that Measure by that Time it is brought to shape.

Let the Gravel be brought directly from the Pit to the Walk, and the sooner it is spread, laid, and pressed the better: there is a natural Tendency in Gravel, such as we directed to be used, to bind when it first comes out of the Earth, which is soon lost when it is exposed to the Air.

The Reason of this is plain: the loamy Part is then well mixed among the stony, and it has its full natural Strength and Clamminess; whereas when the Gravel has been some Time exposed in a Heap, the Rains wash away a Part of it, and the Air calcines the rest; so that there neither remains enough in Quantity, nor has it the true Quality.

Every one knows that the turning up a clayey Soil to the Air breaks it, and takes off the Toughness: now the Toughness in this Earth which is blended among the Gravel, is the very Quality we want, and should by no Means be impaired.

When fresh Gravel of a good Kind is chosen, and the whole is thus made to its true Form, and by frequent heavy Rollings fixed to it, and preserved in it, it becomes that kind of Walk Foreigners envy, and which ourselves never can enough value: it is hard, perfectly smooth, and clean. No Rain penetrates it afterward, and every Shower washes it. More Height in the Middle may be required where a worse Gravel is used, or where it is worse put together; but in this Way of making, not only the Form throws off the Water, but the compact Nature and Substance of the Gravel does not permit it to remain long enough to penetrate.

The Care and Pains we direct in the first laying this Walk, will be very well repaid by its future Beauty, and the Ease with which it will be kept in good Condition.

Having been once well fixed in every Part, the Roller will run easily over it for the future; and will keep it in its perfect Form without Trouble: but the easier the rolling becomes, the oftener let it be done, for 'tis the Business to preserve this compact Substance and true Surface.

The great Fault of these Walks is the Rise of Weeds upon them; but when this Method is observed, there is no great Danger of that Mischief. Weeds are of two Kinds, perennial and annual, the perennial are the only Kinds which could shoot up from the Bottom; and these in

ill-made Walks are often very troublesome.

I have seen Fern and Thistles make their Way through a Gravel Walk, upon a Piece that was once common; and Horse-radish, where it has been made in a Part of the Ground where that once grew; and these have been unconquerable, except by a new making of the Walk.

The other Kinds, which are the most common, rise from scattered Seeds; as Groundsel, Shepherds Purse, and Dandelion; these are blown about by the Winds, and where they stop they shoot. The picking them out as they appear is not difficult, but it is an endless Work, and it always more or less defaces the Gravel. In the careful Manner we have directed of making the Walk, both these Evils are nip'd in the Bud.

In the clearing away the Ground for the Space the Walk is to cover, the Gardener knows he is to dig out all large Roots of perennial Weeds which are in the Way; and even if this were omitted, it would not be easy for them to make them shoot through so much Lime Rubbish, and such a Bed of Gravel; but with that farther Precaution, it is quite impossible there should be any Danger of such Disturbance.

At the same Time the hard rolling of the Walks keeps them so firm, and with so even a Surface, that the Seeds of Weeds which are blown on them are in like manner blown off again, and nothing remains to shoot.

The rounded Figure of the Walks affits in this; and at the same Time the Nature of the Loam which binds with the Gravel, makes it unfit for their Vegetation.

These are the Advantages of good laying and frequent rolling of Gravel Walks; and with this Care there will be no occasion for that common Practice of breaking them up, and laying the Stuff in Ridges every Winter.

This makes the Walks unserviceable for a great Part of the Year; and is a most unreasonable Practice, for it contradicts the very Nature of that essential Rule which we have laid down for making Walks of Gravel, that has not been exposed to the Air.

The throwing them up in Ridges gives the Rains, Dews, and Sun, that very Power over them we so much wish to prevent; and renders the Loam brittle, and loose. The Seeds of many Kinds of Weeds are also received into it while it lies thus, and they shoot afterwards. The Gravel that is often turned up in this Manner never can bind well; and instead of preventing Weeds, the very Practice occasions them.

When the Surface is hard and smooth, the Seeds cannot lie upon it, nor could they strike if they were to remain; or if they did, the next rolling would destroy them in the Shoot. This therefore is the Way to make and keep these Walks perfect.

Sept.

Sept.

C H A P. V. *Of GRASSES.*

THE Consideration of Grass naturally succeeds that of Gravel : it is another of those essential Parts of a Garden in which we have the Means of exceeding all the World ; and in this, as well as the other, the common Practice is very imperfect.

As it is a Beauty in a Gravel Walk to appear a little rounded, so the proper Form of Grass Walks is a perfect Flat. It is not always the Nature and Situation of the Ground will admit of this ; but when it is necessary to depart from it, the Art is to conceal it from the Eye. As the proper Form of a Grass Walk is Flatness, this should always be preserved in Appearance, if it cannot be given in Reality.

When the Ground is naturally dry, the Surface of the Grass Walks should be perfectly flat ; but when somewhat moist, there must be allowed

a little Roundness to prevent the Water from lodging on any Part.

In this Case also it will be proper to cut Water Tables on each Side ; they will at once drain the Body of the Walk, and give it a clean Edge.

Beside Walks, we are to consider Grass in the Capacity of making Plats and Lawns, and those several other Parts of a Garden which are to be covered with it, whether for the Softness and Coolness of walking in the Summer, for the Contrast of Flowers and Plantations.

What we have to observe in regard to the Nature of Grass, is the same with respect of all these ; we shall therefore consider only the Form and Construction of the Walks first, and afterwards the covering them with this everlasting Carpet.

C H A P. VI.

Of the Construction of GRASS WALKS.

THE Grass Walks in a Garden should be fewer in Number than the Gravel, because they are not of such constant Use ; but for this very Reason they should be spacious ; and there should be contrived a very considerable Part in Plats, or other Grass Work, because this green is more natural, and more pleasing to the Eye ; and more of the true Taste of a Garden than the Gravel.

There is no Error in Gardening greater than that of making Grass Walks too narrow. It is wrong in those of the other Kind, because it gives them a poor confined Look, but it is doubly amiss in these ; because it is not only poor, but unnatural, and the Grass cannot thrive in them.

The Compass and Quantity of Ground to be allowed to this kind of Work, should never restrain the Breadth ; for 'tis better to have a broad and short Walk than a long narrow one ; and much more creditable to have but one good one, than half a Dozen trifling ones.

The Breadth and Length being thus marked out, let the Gardener consider the Nature of the Ground before he proceeds, that he may know whether they should be made in a perfect flat, or with some rounding. Whichever kind be proper, let the Ground be laid with perfect Regularity.

Let him begin by paring off the natural Surface ; and if the Walk is to be flat, let him lay it to a true Level ; if to be rounded, let him in the same Manner take Care that it be done with Truth. The Rise must be very small, an Inch and half is sufficient in a Walk of five and twenty Foot. Let this be marked by Stakes in several Places.

When the Surface is pared off, let all the Roots of perennial Weeds be dug out with the greatest Care : then let the Surface be broke with a Pick-axe, and raked to Shape, and the Quantity

of an Inch and half of fine Garden Mould be strewn over it.

Let this be again raked and brought to the exact Form, and there is then the Bed of the Walk made ; and it is ready for the Grass whether that be to be given by Seed or Turfing.

The Method by Seed is easy, but it is not comparable to the other. There is great Difficulty in getting good Seed : for that from a common Haystack is by no means proper.

Those who chuse this Method must get the Seed from the Grass of a clean up-land Pasture ; and it must be scattered over the Bed of the Walk very thick, and raked in ; levelling the Surface to a Truth as before. After this it must be carefully weeded, and afterwards rolled in the same manner as those made with Turf.

This is the Method of sowing, but we have said the other is preferable : it does the Business sooner, and much more perfectly. The Grass from sowing rises slow, and thin, but the other at once is in full Perfection.

If the Choice therefore be to turf the Walk, the Method is the same in preparing the Bed, only the Surface must be watered before the Turf is laid down.

The great Article is the proper Choice of the Turf. It should be such as is covered with a very thick short Grass, and is as free as possible from Weeds.

Let the Gardener look over the Ground whence he is to take it with a careful Eye, and chuse, if possible, a Spot where there is not the least Mixture of any other Growth among the Grass, and where the Grass itself is thick.

The Intent of a Grass Walk is perfect green ; and every Thing that interferes with the Uniformity of that Colour spoils it. All tall Weeds

are

Sept. are hateful, because when they are cut away their Stumps and Bottoms are unpleasing in the highest degree both to the Eye and to the Feet. Daifies, tho' low, are yet very ungraceful when there are too many of them.

The Gardener finds continual Mowings necessary where these little Flowers abound, and yet it does not answer the Purpose: the hydra Heads seem to grow beneath the Scythe, and if all be cut off at Evening, there will be Millions open by the succeeding Noon. They are very pretty in Meadows; but in the Grass Work of a Garden, they break in upon that Uniformity of Colour which is the great Article of Beauty.

The only proper Mixture with the Grass of Turf for Walks is the White Trefoil. It is a small Kind of this Plant which grows on Commons, whose Leaves are numerous, their Footstalks short, and their Colour a fine green:

Sept. these mix well with the Grass, and form a fine green thick Bottom, and the Flowers in this Kind are few; they are not collected in Heads as the other Trefoils, but stand loose, and near the Ground.

This little Trefoil therefore has all the Qualities requisite to thicken and improve the carpeting of Turf; and its being plentiful in the Spot whence that is to be taken, is an Advantage, not a Hurt, but this is the only Weed that should be admitted.

Such a Spot being chosen, let the Gardener prepare for the Work with Alacrity and Dispatch; Grass is very hardy; but we wish it to grow without a Check when laid down in its new Place; and to this there requires Expedition in the laying, a due Thickness of the Body, and a good Preparation of the Bed on which it is to be laid. These we are now to consider.

C H A P. VII.

Of cutting and laying the TURF.

AT the same Time that an inferior Hand is employed in cutting up the Turf, let the Gardener himself be preparing the Bed for it. We have directed the Walk to be laid naked, and to have an Inch and half of fine Mould upon it: what he is now to do is to see that the Surface be true according to the Design, and then he is to sprinkle it well over with Water.

The Turf fresh cut from the Common is to be immediately laid down in perfect Regularity; and when laid and beat, let it have another good Watering. We know Turfing will succeed, that is done with half this Trouble, but we lay down the Method by which the Success will be perfect.

The best Time is Evening; the best Weather such as is cloudy and inclined to Rain; and to do

it in the most perfect Manner, only a small Space of the Walk should be covered at a Time.

When the whole is thus laid, let it be lightly rolled with a wooden Roller, and Care taken that this presses equally, and is well managed, otherwise it will injure the Shape of the Walks, especially of those which are laid with a little round.

After this first rolling it should lie to be refreshed by some good Showers; and when about three Parts dried from them, it should be rolled again with the same Caution; after this it should be left till the Ground is well dried, and then rolled with a heavier Roller.

Thus the Walk will be kept to its true Form, the Turfs will be blended into one compact covering, and the whole will be perfected.

C H A P. VIII.

Of keeping Grass in Order.

THE first Annoyance the Gardener will perceive on his Grass Walks is from Worm Casts: these will be very frequent, and unless timely destroyed, a great Blemish. The Method is to break and spread them upon the Surface with long, tough, and pliable Ash-poles. This answers the double Purpose of clearing them off the Walks, and of manuring the Ground, for they are a very rich Dressing; and being thus spread upon the Surface, encourage the Growth of the Grass.

The Care of Weeds has been in a great measure obviated, by chusing a Turf naturally free from them; but if any appear, they must be drawn out with great Care.

After this the whole Care will consist in frequent Rolling and Mowing. The oftener this

is done the evener will be the Surface, and the thicker the Bottom.

It is useful at all Times, but most essential in Autumn. The Mowings should be more frequent than ordinary at that Time, for nothing can keep the Turf green in Winter but the preventing its shooting up into high Blades at this Season.

In all these Rollings, both of Grass and Gravel, Care must be taken that they are not damaged in the doing it by the Feet of the Men, or Horses who draw the Rollers.

The Horses should be without Shoes, and have their Feet covered with Woollen Mufflers; and the Men should wear for this Purpose Shoes that are made flat, and have no rising Heels.

E D E N :

A

COMPLETE BODY OF GARDENING.

NUMBER LIII.

For the latter Part of SEPTEMBER.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

I. INDIAN EXACUM.

Sept.
Pl. 53.
Fig. 1.

THIS extremely pretty little annual rises so freely with us from Seed, and makes so agreeable a Variety among the larger and more specious Stove Plants, that it very well deserves the Attention of all who have Opportunities of raising it: nor is the Stove Heat to be supposed essential to its flowering; it succeeds best with that Management, but will live without that Advantage in a warm and well sheltered Place.

The old Writers could not be acquainted with it, for 'tis not native any where but in the *American* Islands. We owe the first tolerable Account of it to PLUKENET, who seeing something of a Resemblance of two Plants, the *small Centaury* and the *Saint John's Wort*, in it, named from both, *Centaurium minus Hypericoides flore luteo, lini capitulis*: flax headed yellow Saint John's Wort like small Centaury.

LINNÆUS refers it to a new Genus *Exacum*; and as there is another Species whose Flowers are sessile, he distinguishes this by the Footstalks to them. *Exacum floribus pedunculatis*: Exacum with Flowers on Footstalks.

We have an Instance in these two Names of PLUKENET and LINNÆUS's, of the Imperfection of Botany till the last Author's Time; and of the Improvement it owes to his clear Judgment in this great Article of specifick Distinctions.

To understand any Thing by PLUKENET's Numb. LIII.

Name, it is necessary to know two other Plants beside that to whose Genus it was referred: even the Name of that Genus is very unscientific; and when the two other Plants, and its Characters are known, we find that this before us belongs neither to that Genus, nor has any distinct or proper Resemblance of the other two.

Such was the uncertain State of botanical Knowledge, so vague its Terms, and so unsettled its Distinctions. A Plant was known by the Name its first Finder gave it, however improper; and this travelling from Mouth to Mouth, all that was called the Science was remembering it: Men were content to call him a Botanist, who knew Plants by their Names; and he was the best who knew most in Number.

From this Confusion and Error, the discerning *Swede* rescued the Science: he gave Names to appropriated Assortments of Plants agreeing in obvious Characters; and to be called a Botanist now, it is needful to follow him through the Varieties of Nature, and learn them.

'Tis thus in the present Instance; and what was supposed to render the Science difficult in this, and other Cases, is at length found to make it clear.

LINNÆUS finding this and the other Plant we have named, distinct from all others in their Characters, yet mutually agreeing in them, separated

Sept.

Sept. rated them from all; and united them together, constituting the Genus *Exacum*.

The Characters of this convey the general Idea of the Plant, and this short Addition, *floribus pedunculatis*, its certain, determinate, and specific Distinction.

The Root is long, slender, white, and hung with a few Fibres.

The Stalk is round, erect, and at the Top divided in a regular and elegant manner into a number of Branches, which by their Subdivisions form a round large Head. The Colour of the Stalk is pale, it is ting'd often with brown or red toward the Bottom; and is lightly striated.

The Leaves are placed in Pairs; they are small, of the lanceolate oval Form; that is, narrow at the Base, broadest at a little Distance from it, and thence smaller again till they terminate obtusely.

The Flowers are small, but they are innumerable; they are elegantly placed, starry, of a Gold yellow, and spread all over the broad Head by the Subdivisions of the Branches.

Each Flower has its little four leaved Cup, which remains when it is fallen, defending the Seed-vessel. The Leaves are oval, obtuse, and rise obliquely upwards. The Structure of the Flower itself is very singular: it is formed of one Petal; and at the Base is hollow, swelled, and in a manner globular. This Part is of the Length of the Cup. The Rim is cut into four oblong and expanded Segments.

In the Centre are placed four thready Filaments, crowned with roundish Buttons. The Rudiment of the Seed-vessel fills the tubular Part of the Flower; and the Style which rises from it is single, and of the Length of the Filaments, which is equal to that of the Segments of the Petal.

The Head is thick and roundish.

The Seed-vessel is roundish, but compressed and furrowed on each Side, and divided into

two Cells: in each of which are contained numerous Seeds, with a large Receptacle. This is the Head, the first Describer of the Plant resembled to that of Flax. It is of the Bigness of the Cup which remains with it, as does often also the Flower faded, and without Colour.

The Class is obvious: four Filaments refer it to the *Tetrandria*, the fourth in the *Linnean* System, and the single Style shews it to be one of the *Monogynia*, the first Order of that Division.

Culture of this EXACUM.

To see this little Plant in its full Perfection, it should be allowed all the Advantages we bestow upon the more specious and gaudy Kinds of the same Quarter of the World: and this will be very easy to those who raise others. It is naturally found in dry and half burnt Soils; and this must teach us its fit Compost: Pasture Earth with some Sand and Wood-pile Mould will very well answer the Purpose; or any of the light, and not too rich Composts may be taken.

A Pot should be filled with this early in Spring, and let some Seeds obtained from its native Country, or saved here, be scattered over the Surface; and covered with a Straws-breadth of the same Mould: let the Pot be set up to the Rim in a Bark-bed, and the Mould at Times watered.

When the Plants have a little Strength, let them be thinned by pulling up the worst, till there are only four or five left in the Pot, or according to its Size, as many as it can well support.

These must be by degrees accustomed a little to the Air; and about the latter End of May they must be taken into the Stove, in the original Pot; for it is essential to them not to be removed. They will require moderate Waterings, and will flower, and ripen Seeds perfectly.

2. THREE COLOURED PROTEA.

Pl. 53.
Fig. 2.

We have before described the silvery *Protea*, one of the most conspicuous as well as most elegant Objects of the Vegetable World. This, though much inferior to it, has yet a great deal of Singularity and Beauty: there is required some Care to raise and to preserve it; but the Elegance and Peculiarity very well recompense that Attention.

The old Authors were not acquainted with it, but in Times of more Curiosity, those who sent the Seeds of rare Plants from the *Cape*, gave this among the other Kinds; and it was admired in our Gardens, as soon as known in preserved Specimens brought over by Collectors of natural Curiosities.

PLUKENET, one of the first who saw it, referred it to the *Chrysanthemum* Kind, adding, *fruticose*

polygoni foliis Africanum caulibus scabris flore minore: small flowered Shrub African Chrysanthemum, with knotgrass Leaves, and rough Stalks.

We have had Occasion before to observe, how very unartful the old Names were; and this may stand as a second Instance; the false Principle once established, this laborious Author flew to it on all Occasions.

It was impossible a Plant so utterly unlike the *Chrysanthemum* in its real Characters, should impose upon LINNÆUS; or the Authority of any Name mislead him. He referred it to the Genus *Protea*, and adds, as its Distinction from the other Species, *foliis ovatis obtusis imbricatis, capitulis globosis*: spherical headed *Protea*, with oval obtuse Leaves placed one over another as Scales. To this

Sept.

this he refers the *Protea, foliis oblongo ovatis lana obvolutis* of VAN ROYEN, and BOERHAAVE's short and round leaved *Conocarpodendron*.

The Root is woody and spreading.

The Plant is a Shrub of three, four, or more Feet in Height; and sometimes a little Tree.

The Stem is tough, and covered with an uneven brown Bark.

The Branches are numerous, they stand with perfect Irregularity, and they are of a paler Hue, often covered with a woolly or cottony Substance.

The Leaves stand thick upon them, entirely covering all the young Shoots, and lying one upon another like Tiles on Houses, or the Scales of Fish: they are small, and of an oval Figure, obtuse, thick, and of a firm Substance, and are more or less covered with an irregular cottony Matter; and in Proportion to this they appear green, brownish, or white; plain, or spotted: but their most natural and most pleasing Colour is a deep green tinged with brown, and dotted with grey.

The Flowers terminate all the Branches in round Clusters, not large, but thick set, and extremely elegant. They are of a most delicate lively green at first; as the Flowers open they appear yellow; and as they decay, brown.

The Flowers open upon every Head in a Succession from the Bottom; and, in consequence, the three Colours are seen on every Head when it has some time flowered, and they set one another off in a very pleasing manner. In this Case the Bottom of the Head is brown; the Middle, where the Flowers are perfect, is yellow; and the Top, where they are in Bud, is green.

Each Flower is formed of a single Petal, but the Cup is common to them all: this is rounded, and is composed of oval Scales laid over one another with a fair Regularity. The Flowers exceed the Scales of the Cup in Length, and cover its Surface in an uniform manner.

The Flower is tubular at the Base, and at the Rim divided into four equal Segments, which spread open.

In the Centre are placed four Filaments, bristly,

and longer than the Flower, and these are crowned with incumbent Buttons. In the Midst of them appears a Style of the same Length, single, upright, and crowned with a round Head.

This takes its Rise from a roundish Rudiment of a Seed, which afterwards ripens, and stands naked in the Cup. The whole Number are fixed to a conic Receptacle, and separated by light chaffy Films.

The four Filaments and single Style shew the Plant to be one of the *Tetrandria Monogynia* of LINNÆUS.

Culture of this PROTEA.

The Shrub is a Native of the *Cape of Good Hope*, where it thrives in deep loose Soils, and fringes the Bottoms of Hills with its innumerable Flowers in a most pleasing and astonishing manner.

With us it requires the Heat of a Stove, and the best Method is to raise it from Seeds.

These should be brought over in their Heads; and as soon as received in *England* they should be shook out upon a papered Shelf, and turned every Day to harden: after this they are to be tied up in Paper Bags, and so kept till Spring.

In the Beginning of *March* fill a Pot of some of the light Composts, scatter the Seeds upon this, and sift over them half a Quarter of an Inch of the same Mould. Set the Pot up to the Rim in a Bark-bed, and once in three Days the Mould must be very lightly watered.

When the Plants have a little Strength, they must be taken up, and each planted in a small Pot. These Pots must again be set up to the Rim in the Bark, and Care must be taken to take up a Ball of Earth with each, and to water it carefully when new planted.

The Glasses must be shaded with a Mat in the Middle of the Day, and from Time to Time a little Air must be admitted, and they must be watered. When they are well rooted, and have got some Strength, they must be shifted into larger Pots, and taken into the Stove.

3. CRIMSON IXORA.

Pl. 53.
Fig. 3.

The *Indies* scarce afford us a Shrub of greater Elegance than this high coloured *Ixora*: or one more qualified to strike the Attention even of the Incurious, or promote the Love of the Science. The old Writers were not acquainted with it; but PLUKENET and BURMAN have shewn they had a due Sense of its Excellence.

They have referred it to the *Jasmines*, a natural Error, from the tufted Growth, and general Aspect of the Flowers; but by no means justifiable in those who have considered the Science of Botany. If they had overlooked that Character from which LINNÆUS deduces the Distinctions of Classes, or had not seen, or had not regarded

that the *Jasmines* have only two Filaments, and this Plant four; they should have still seen the more obvious Character, that the *Jasmine* Flower is cut into five Segments, large and distinct like Petals; and this only into four.

Overlooking all this natural Distinction, PLUKENET has called the Shrub *Jasminum indicum lauri folium indorum umbellatum floribus coccineis*: Bay leaved Indian Jasmine, with crimson scented Flowers in Umbells.

BURMAN has less Excuse, he wrote with more Observance of Nature, and after LINNÆUS; but against all this he preserves the Name *Jasmine*; and triumphing in continuing in the Wrong, against

Sept. against the Evidence of his Senses as well as Reason, names it *Jasminum flore tetrapetalo Ixora Linnæi*, Schetti *Horti Malabarici*: tetrapetalous Jasmine, which Linnæus calls Ixora, and the Malays Schetti. Would it not appear from this that BURMAN held at once the Number of the greater and lesser Parts of a Flower, frivolous in Point of generical Characters, and placed LINNÆUS on the Rank of the least scientific Writers.

The Establishment of a System on the small Parts of Flowers, which is at present understood to be the Glory of LINNÆUS, is indeed liable to Exception: but for the rest, his Characters of Genera, and his Distinctions of Species, he deserves all that Honour which is paid him now, and will be paid to his Memory as long as Botany is a Science.

Referring this Shrub to the *Ixora*, he adds as its Distinction from the other Species, *Folii ovalibus semi-amplexi-caulibus*: Ixora with oval Leaves which partly embrace the Stalk. There is a great deal of Wildness in the general Growth of the Shrub, and of Uncertainty in the Disposition of the Leaves; but those on the upper Parts of the Branches have always this particular Character.

It is a Shrub of considerable Growth, and in its native Country rises with numerous Shoots to eight or nine Foot in Height, variously branched; and, when in full Flower, too bright to be long looked upon.

The Root is long, and penetrates to a great Depth in the Earth, and is brown on the Outside, red within, and full of Juice.

The main Stems are of a dusky purplish brown; the Branches paler, and of a somewhat browner Hue; and the young Shoots grey.

The Leaves stand in Pairs, and are large and handsome; those on the lower Part of the Branches have short Footstalks, those on the upper none: and of these last, such as stand nearest to the Extremities, in Part surround the Stalk at the Base. They are of an oval Form, and firm Substance. Their Colour on the upper Side is a fine strong brownish green, bright and shining; and on the under Side more pale and dead.

The Flowers crown the Tops of all the Branches in large Tufts, and they are of a glowing Crimson, deep and bloody as it was at first; afterwards paler, and as they fade yellowish; they have no Scent. Nature, when she gives so much in Colour, often denies that farther Advantage.

Each Flower has its Cup, which is formed of a single Piece, cut into four Parts at the Edge, and permanent. The Flower is formed of a single Petal, tubular at the Base, and cut into four Parts at the Edge.

The Tube is very long and slender, and is

Sept. of the same Crimson with the rest of the Flower; this gives a singular Aspect to the whole, and each Flower seems to have its long slender crimson Footstalk: so VAN RHEEDE supposed these tubular Bases of the Flowers to be, and such BURMAN seems to have understood them, calling the Flower *Tetrapetalous*: the four Parts unite at the Head of this Tube, and are therefore nothing more than Segments. These Segments are oval, flat, and expanded.

The Filaments are four; they are very short and crooked; and they are placed in the Divisions of the Flower, and crowned with oblong Buttons.

The Style is single, and of the Length of the Tube; it rises from a round Rudiment in the Base of the Cup, and is crowned with a Head split into two Parts.

The Fruit is a roundish Berry, and divided into two Cells; in each of which are two Seeds, angular on one Side, and convex on the other.

The four Filaments and single Style refer the Shrub to the *Tetrandria Monogymia* of LINNÆUS; the fourth Class of that Author, and its first Section.

Culture of this IXORA.

It is a Native of the warmest Parts of *Asia* and *America*; and with us will never shew its full Beauty, unless it be allowed the Advantage of a Stove.

The Method of propagating the Shrub should be by Layers. The Seeds never ripen perfectly in cold Climates, and there is great Uncertainty in getting them fresh, and in a growing Condition, from the *Indies*. The first raising of the Shrub must be from these; and the Method is to be the same we have just directed for the raising the *Protea*: but when a good Plant is once obtained, the Layers are the right Practice.

In *March*, two or three Boxes of a rich Compost should be placed about the Shrub, and raised to such a Height that a Branch may be easily brought down to each. This is to be laid in the usual Manner, securing it well in its Place, and from Time to Time refreshing it with Water.

The Warmth of the Air, and the Moisture added to the natural vegetative Vigour of the Tree, will make them soon take Root. In *June* they will be ready to take off from the old Plant; and they must then be planted with Care in separate Pots: they must be shaded and watered till they have taken Root, and they will afterwards require no more Care than that bestowed on other Stove Plants.

Sept.

Sept.

4. MITCHELLA.

Pl. 53.
Fig. 4.

This elegant little Plant we owe, like the others just described, to modern Curiosity. The old Writers could not know it, for it is found only in *America*; but the Science of Botany no sooner travelled thither, than this was one of its Discoveries.

But though the first *American* Botanists, and all who wrote after them, have named it; 'tis but of late Time that it has been reduced to a proper Genus.

The inferior Race of Botanists take these Things as they are; 'tis to LINNÆUS the Honour belongs of ascertaining old, or establishing new Genera; and upon these Occasions the Eyes of *Europe* are constantly turned to him. There requires Knowledge and Spirit to adventure these Decisions, and 'tis happy for the learned World, even for those who most censure that Author, that he has shewn both. Till his Time this elegant Plant has had almost as many Names as there were Writers who have mentioned it.

PETIVER, who first gave us Knowledge of its general Form, called it by a Name perfectly undeterminate, *Baccifera Mariana clematis daphnoides minoris folio*: a Maryland Berry-bearing Plant, with Leaves like the small Periwinkle.

CATESBY, though he called it a *Syringa*, is not to be said to have given it that Name, he took PLUKENET's, which is, *Syringa baccifera myrtis foliis subrotundis floribus albis Gemellis*: Berry-bearing *Syringa*, with roundish Leaves like those of Myrtle, and with white Flowers two together.

GRONOVIVS, much more modern and more acquainted with the Laws of Science, refer'd it to the *Lonicera*, adding as its Distinction, *Foliis subovatis germine bifloro corollis interno hirsutis stylo bifido*: oval-leav'd *Lonicera* with Flowers hairy within, and rising two from the Germ, and with a divided Style.

Thus stood the Plant known to all Botanists, but ill examined as to its Characters; and refer'd to a Genus to which it did not belong; till Dr. MITCHELL, to whom the Science owes great Advances and Improvements, examining its Characters, found it distinct from all known Kinds, and named it *Chama Daphne*. LINNÆUS rewarded him with Immortality: he removed the Name; and, retaining the Genus, gave it that of its Author, *Mitchella*.

To this, as there is no other known Species, he adds no Epithet.

It is a very delicate Plant.

The Root is composed of many long Fibres, connected to a small Head.

The Stalk is round, and not very firm, stained toward the Ground with red; and for the rest, of a pale green.

The Leaves are placed in Pairs: they are small, oval, and of a fresh green Colour, lightly rib'd, and supported on slender Footstalks.

The Flowers terminate the Stalk, and two naturally rise there together; they are large, white, and hairy within.

The two Flowers rise from the same Rudiment; but each has its separate Cup. This is small, upright, permanent, and cut at the Top into four pointed Segments.

The Body of the Flower is formed of one Petal; and is long, hollow, and as *Tournefort* has taught us to express ourselves, Funnel-fashion'd; but 'tis a coarse and ill chosen Term: 'tis broadest at the Mouth, where it opens into four Segments; and thence gradually smaller to the Base; it is smooth on the outside, and hairy within.

Four oblong upright Filaments rise from the Divisions of the Petals, and are crowned with oblong acute Buttons.

The Style is slender, thready, and is crowned with four oblong Heads. Each Flower has its Style, and they rise from the Germ, or Rudiment which is placed beneath the Receptacle of the two Flowers. Its Form is rounded and doubled; and it ripens into a globular Berry divided into two Parts with separated Dents.

The Seeds are four, and they are of a compress'd Form, and callous Substance.

Culture of the MITCHELLA.

It is a Native of *North-America*; and though a delicate, is a shrubby Plant. There is no great Care needed for its Culture, and were it much more tender, the Singularity of the Flowers would very well deserve any Attention in raising it.

The Soil for it should be a Mixture of two Parts Garden Mould, and one Pond Mud. The Seeds are the best Source for good Plants, and they should be sown in Spring upon a Bed of this Compost in the Nursery.

When the Plants come up they should be thinned if they rise too close, and carefully weeded and watered till they are of a Size to transplant. They may then be planted out in the Garden in sheltered Places, and they will flower in their full natural Perfection. Some pot them, and give them the Shelter of a Greenhouse in Winter; but it curbs their Growth, and is not necessary.

5. SHRUBBY JUSSIEA.

Pl. 53.
Fig. 5.

This is a very elegant and singular Plant, unknown till of late Time, but worthy to

No 53.

be introduced into every Garden where there are Opportunities of raising it.

7 X

HERMAN

Sept. HERMAN has described it under the Name of a *Lissymachia*, adding *Non papposa flore luteo minimo, siliquis caryophyllorum aromaticorum æmulis*: little yellow-flower'd Lyfimachia with Seeds not downy, and with Pods resembling the Clove Spice.

VAN ROYEN referred it to the *Ludwigia*, adding, *Capsulis oblongis*: *Ludwigia* with oblong Pods. LINNÆUS, with better Regard to the Characters of Nature, refers it to the Genus *Jussiaea*, so named from the distinguished *Jussieu* of *Paris*, who studies and teaches Botany under the Patronage of his Sovereign: he adds, as the Distinction of this Species, *Erecta villosa floribus tetrapetalis oëlandris pedunculatis*: upright hairy *Jussiaea*, with four-leav'd Flowers on Footstalks, and eight Filaments in each. This is a singular specifick Distinction, but it is highly just, for the ordinary *Jussiaeas* have ten. It shews the Imperfection of the System of LINNÆUS, while it commends his most accurate specifick Distinctions.

The Root is white, and hung with innumerable Fibres.

The Stem is firm, and almost woody; the Height three Feet, and the Branches numerous. The main Stem has the Remains of four Ridges, and the younger Shoots are absolutely square.

The Bark is brown, with a Tinge of red on the older Parts, but on the younger it is pale; and the young Shoots are lightly hairy.

The Leaves are numerous, and of an elegant Form, oblong, moderately broad, undivided at the Edges, and sharp-pointed; they stand alternately on the Branches, and they have very short Footstalks; those on the extreme Parts none. They are broadest toward the middle, and truly lanceolate. Their Colour is a strong green on the upper Side, and a faint or whitish green below: and they are lightly hairy, soft to the Touch, and of a tender Substance.

The Flowers are small, and of a delicate yellow; they stand in the Bosoms of the Leaves, the Rudiments of the Fruit serving in the Place of Footstalks.

Each Flower has its Cup, this stands together with it on the Rudiment, and is small, and composed of four little oval pointed Leaves, which cohere at the Base, and remain after the Flower is fallen.

The Body of the Flower is composed of

Sept. four roundish Petals, which spread wide open; and the Filaments are eight: they are short, and they have roundish Buttons.

The Style is single and slender, and its Head is thick, and marked with five Ridges.

The Seed-vessel is oblong, thick, crowned with the Cup, and filled with numerous Seeds in several Series. It is this Seed-vessel, which throughout the whole Time of the Plants flowering, makes so conspicuous a Figure. It is an Inch in Length, and has the Ridges slight, and the Crown large.

They are of a pale green at first, afterwards of a deep brown; and they resemble in this last Condition extremely the common Clove Spice.

The Student will at once refer the Plant to the *Oëlandria* of LINNÆUS; but he is to be told the *Jussiaea* belongs to the *Decandria*. Nature wantons a little in this Matter; and the general Number in the Genus is ten Filaments, and five Petals or Segments. LINNÆUS observes, that one fifth of the Number in all the Parts is in some Species deficient, and this is an Instance: but it is not constant or certain even in this; for there are Flowers on some Plants, in which the Filaments are regularly ten. In these the Ridges on the Rudiment of the Fruit are five, the Leaves of the Cup five, and the Petals of the Flower of the same Number.

Culture of this JUSSIEA.

It is a Native of the warmest Part of the Indies, and thrives best near the Waters, where the Soil is deep, mellow, and rich.

With us it should be raised from Seed in a Soil of the same Kind.

The Compost should consist of equal Parts of Garden Mould and Pond Mud, and in this the Seeds should be sown in a Pot, which when they have been covered a Straw's Breadth with the same Mould, must be set up to the Rim in a bark Bed; and there managed as we have directed before.

There requires nothing particular in the Management of the Plants; only where they are large enough to remove, they must be at once put into Pots of a Size to hold them when full grown, for they do not well bear often removing; and when they are well rooted, must be set in, to take their Fate with the rest.

6. TRIFID LEAVED LEUCADENDROS.

Pl. 53.
Fig. 6.

This is a very singular Shrub, of a Genus distinguished for its great Beauty, and itself not destitute of that Character, though inferior to many of the others.

The earlier Writers were not acquainted with it, nor did those who first receiv'd Plants from *Africa* know by what Name to call it.

PLUKENET, by a strange Thought, referred it

to the *Cyanus*, adding as its Distinction, *Æthiopicus rigidis capillaceis tenuissimis foliis trifidis*: *Æthiopian Cyanus*, with harsh very fine Leaves terminated by three Points.

VAN ROYEN referred it to the *Protea*, and added, *Foliis linearibus ramosis*: *Protea* with linear branched Leaves.

LINNÆUS places it with the other Species of *Leucadendros*;

Sept. *Leucadendros*; and adds, *Foliis setaceis semitrifidis*.
Leucadendros, with setaceous. Leaves imperfectly divided into three Parts.

It is a small Shrub, branched, and naturally spreading.

The Root is divided into many Parts and hung with Fibres.

The Stem is firm, brown, and upright. The young Shoots are tinged with red.

The Leaves are very numerous and fine; they are small, and of a pale green, and are divided into almost capillary Segments, whose natural Termination is in three Points.

The Flowers are collected into small Heads at the Extremities of all the Branches. They stand in great Numbers in a common Cup; the Scales of which are unequal in Size, and lie loosely one upon another.

Each Flower is composed of two Petals, and is oblong, and has a downy Aspect on the outside. The upper Petal has a long narrow Base; and in the upper Part is lanceolate and undivided; in the lower Part this is closely united to the under Petal. This lower Petal has also a long Base, but it is three Times as broad as in the upper; and the Verge is oblong, semicylindrick, and cut at the Ends into three Segments: this is the very singular Structure of this Flower.

The Filaments are four; they are very short, of a tubulated Form, and are inserted within the Segments.

The Buttons or Antheræ answer to the rest in the Peculiarity of their Shape and Construction. Each of these is properly composed of four, which unite into a cylindrick Form.

The Style is extremely long, and is crowned with a simple Head. It rises from the Rudiment

of a Seed which is somewhat long; and when Sept. ripe, remains naked in the Cup.

The four Filaments and single Style shew this to be one of the *Tetrandria Monogynia* of LINNÆUS, the fourth Class in that Author's System, and its first Section.

Culture of this LEUCADENDRON.

It is a Native of the *Cape of Good Hope*, where it lives best in a dry loose sandy Soil, and spreads into a vast Shrub with clustered Branches.

With us it requires the Heat of a Bark-bed to raise it from Seed, which is the best Method, and afterwards the Winter Shelter of a Greenhouse.

The Seeds of this should be procured as fresh as possible from the *Cape*, and in Spring sown upon some of the light and not too rich Composts in a Pot. The Seeds require to be just covered with Mould, and the Pot is then to be set up to the Rim in Bark.

When the Earth grows dry it must be lightly refreshed with Water; and when the Plants are two Inches high, they must be transplanted each into a separate small Pot of the same Compost. In this they must be set again in the Bark-bed, and sheltered with Mats from the Noon-day Sun till well rooted; refreshing them often with Water.

When they are well rooted, the Air must be admitted to them by Degrees; and when they are able to bear it, they must be brought out among the Greenhouse Plants; and taken into the warmest Part of that Building in the Beginning of Autumn; managing them in all Respects as Greenhouse Plants.

7. CALLICARPA.

Pl. 53. *America*, which like *Africa* to the Antients, is continually affording us something new in Botany, has not at any Time shewn a more peculiar Shrub than this: a Vegetable of the woody Kind with the Aspect of a verticillate Plant; and with Berries for the Fruit. The Botanist could scarce form in his own Mind a stranger Combination.

In naming *America* for its Country, we exclude the earlier Writers from any Knowledge of the Plant. Of late Time many have described it, but till LINNÆUS none named it properly. CATESBY calls it *Frutex baccifer verticillatus foliis scabris latis dentatis & conjugatis*: a verticillate Berry-bearing Shrub, with broad rough rugged Leaves placed in Pairs. This may be received as a short Description, but could not be admitted as a Name. GROENOVIVS in the same Manner calls it indeterminate, *Frutex foliis subrotundis acuminatis, ex adverso binis viminibus lentis infirmis quasi leno canitie testis*: a Shrub with large roundish pointed opposite Leaves, and with tough weak Twigs,

covered as it were with a light Down. This is also a Description put in the Place of a Name, but the Particulars are ill chosen, and the long Phrase less expressive than that of CATESBY. PLUKENET calls it *Anonymos baccifera verticillata folio molli & incano ex America*: a nameless American verticillate Berry-bearing Shrub, with soft woolly Leaves. With such Names was the World content, till that Improver of the Science started the true Method. Dr. MITCHEL, after this, called it *Sphondylococcus*; and last of all LINNÆUS, *Callicarpa*: to this, as there is no other known Species, he adds no Epithet of Distinction.

It is a Shrub of irregular Growth.

The Root penetrates deep into the Earth; the Stem is covered with a brown Bark; and the Branches, which are very numerous, are of a pale olive Colour. These spread variously and irregularly, and the whole has a pleasing Aspect.

The young Shoots are long, tender, and delicate, but not brittle. They throw themselves

Sept. selves naturally obliquely upwards, and they are of a pale greyish green: this is a Mixture of their natural Colour, which is a pale green, and of a whitish woolly Matter, which is spread thinly over them.

The Leaves are placed in Pairs, and they have short Footstalks: they are roundish, but small at the Base; lightly notched at the Edges, sharp pointed, and of a pale or greyish green: they are soft to the Touch, and covered in a light manner with the same Kind of woolly Substance, which spreads itself over the young Shoots.

The Flowers are pale red; they are placed in Clusters round the Twigs, at the Insertions of the Leaves, exactly as in the verticillate Plants. Singly they are small and inconsiderable, but in the Cluster they are sufficiently conspicuous; the more so as this Disposition is very uncommon upon woody Plants.

Each Flower has its Cup, which is small, hollow, bell-shaped, formed of one Piece, but nip'd in four Parts at the Edge.

The Flower is formed of one Petal, and is tubular, the Verge divided at the Edge of the Cup into four expanded obtuse Segments.

The Filaments are four, and they are of twice the Length of the Flower: they are crowned with oval incumbent Buttons.

Sept. The Style is single, and is thicker in the upper Part than below: it is terminated by an abrupt Head, and rises from a roundish Rudiment of a Fruit.

The four Filaments and single Style refer the Shrub plainly to the *Tetrandria Monogynia* of LINNÆUS. The Rudiment afterwards ripens into a round, smooth Berry, with four oblong callous Seeds rising on one Side, and hollowed on the other, and in the whole somewhat compressed.

Culture of the *CALLIGARPA*.

It is a Native of the northern Parts of *America*, and will live with very little Trouble in our Gardens. The Seeds brought from thence grow here freely, and the last Method of raising the Shrub is by them.

They must be sown on a Bed of fresh Earth in a Nursery, and weeded and watered as they advance in Height till they are four or five Inches high; at which Time they may be either planted out in another Bed, or removed at once into the Places where they are to remain.

They may be afterwards encreased by Layers, or by Cuttings very well managed; and in either Case they should be left to Nature in regard to their Form of Growth, for they never do so well as in their wild Shape.

8. AVICENNIA.

Pl. 53. The Druggist has been long acquainted with Fig. 8. *Anacardiums*: he is to be informed this Tree produces them: and it is one of those which gives a distinguish'd Beauty to the *Indian* Forests. The Figure of the Fruit is common in all the botanical Writers, but that of the Tree was long unknown.

The Author of the *Hortus Malabaricus* has given it under the Savage Name *Oepata*; and LINNÆUS has explained and ascertained the Characters under the Title *Avicennia*: to this he adds no Epithet, for there is no other known Species.

It is a vast and very noble Tree, equal to our Elms in Height, and Thickness of the Trunk; and full of Branches. The Bark is rough, and of an olive brown, the wood white and brittle; and the young Shoots of a greyish green.

The Leaves are very numerous and elegant, large as those of the Laurel, and not unlike them in form: they are placed in Pairs, and they have short Footstalks. Their Colour on the upper Side is a strong green; on the under, greyish; and they are of a firm Substance.

The Flowers crown the Extremities of the Branches in large Clusters. Their Colour is a bright yellow edged with white, and they are very fragrant.

Each has its small permanent green Cup; this is formed of one Piece, and divided into five Segments at the Edge.

The Flower is formed of one Petal, which is divided into four Segments, of an oval Form, but pointed.

In the Centre rise four short Filaments, with divided Buttons; and in the Midst of them a single Style, short, permanent, crowned with a pointed Head, and rising from an oval Rudiment. This by degrees enlarges into an oval Fruit, with a Point; which in one Cell contains a single Seed, compressed, oblong, and so full of Vigour, that it will shoot out the first Traces of Root and Leaves while contained in the Fruit.

The four Filaments and single Style in the Flower refer this Tree to the *Tetrandria Monogynia* of LINNÆUS.

Culture of the *AVICENNIA*.

The Method of raising this elegant Tree is from Seed, and the great Hope of Success consists in obtaining that fresh.

In Spring it must be planted carefully in a Pot of fresh Mould, covered a Quarter of an Inch, and set in a Bark-bed which has not too much Heat.

When the young Plants appear they must be watered: when three Inches high they must be taken up each with as much of the Mould as can be preserved about it, and planted in separate Pots.

These must be again set up to the Rim in Bark, and shaded well, and watered lightly till they are rooted: they must then be inur'd by degrees to bear a little Air, and afterwards set out among the Greenhouse Plants: they must be watered frequently and early in Autumn taken into Shelter.



Sept.

As they encrease in Bigness, they must be removed from Time to Time into fresh Pots of larger Size; and every Time there must be as much of the old Mould preserved about them as will secure

them from receiving any Check in the Removal; and they should be every Time shaded till well rooted. Sept.

SECTION II.

The Construction of a GREENHOUSE.

WE have given the needful Directions for chusing the Ground for a Garden, disposing the several Parts, and covering the Walks with Grass and Gravel.

The Subject of Composts, with the Manner of planting, we have delivered at large under the general and particular Culture of more than three Hundred curious Plants and Flowers, with which we purpose it should be enriched; and as many of these are too tender to bear the cold Air of our Winters, though they will very well endure the open Seasons in our more favourable Months; it follows here in course, that we give the Manner of constructing the Building in which they are to be sheltered during that severe Time.

Let the Gardener understand that the general Intent of a Greenhouse is to encrease the natural Warmth of the Air about the Plants preserved in it; and this on all common Occasions, without the Assistance of actual Fire: but as in our variable Climate there are sometimes Winters more severe than usual, there should always be the Means of giving this Assistance, however seldom it is done. Here is the great Article; and there must be occasionally the Means of Shelter: the Air must be admitted when mild, and there must be the Opportunity of doing this in various Degrees.

On these Principles he will understand, that his Greenhouse must be so constructed as to give him Opportunities of admitting or shutting out the Air and Sun, as either is in a Condition to do good or hurt to the Plants.

Let him first chuse a proper Spot. It must be open to the South, and the more it is sheltered from the North and East Winds the better. It must be in a Part of the Ground where the Soil is dry, and if there be a natural Rise so much the better.

In this Place let him mark the Plan of his intended Building; and in the Design, let nothing more have Consideration. It is common to load a Greenhouse with upper Rooms, but that is wrong. The back Wall may serve for the erecting of Sheds for Tools, and other such like Purposes, but nothing more should be done. The Superstructure should never be allowed, because it implies a Solidity below which is out of the Character of the Building. The Sheds behind are, on the contrary, right, because they rather are a Support, serving in the Manner of Buttresses to the main Wall.

The Sight is also offended at a tall heavy Building in a Garden; and its Shadow is hurtful. A

N^o 53.

Greenhouse properly built is in Character, and is an Ornament: but such an Edifice is a Piece of Lumber.

The Extent of the Plan must be adapted to the Number of the Plants intended to be preserved; but in this it will be always proper to make it larger rather than less, than the intended Quantity might seem to demand. Botany is a very bewitching Study, and those who enter at all into it, generally go farther than they at first thought they should.

This Difference in the Extent, concerns only the Length of the Building; for its Depth is subject to a regular Measure, being limited by the Nature of the Design. Fifteen Foot is the proper Space of the Floor in Breadth; and though Proportion might demand that in longer Greenhouses, this should be greater, and in shorter less; yet the Care of the Plants is the sole Consideration the Gardener should regard, and therefore this Measure may stand good for all Greenhouses.

The Back is to be a strait, upright Wall; and the Front in a manner all Glass.

The Height should be in front one eighth more than the Breadth, consequently the Windows should be sixteen Foot in Length; and they should reach from the Top to within ten Inches of the Ground: a Wall of that Height being raised to receive them.

Here then is the Form of the Greenhouse, the Back, and the Ends are to be of Brick; and a low Wall of Brick in front: from this are to be raised Sashes to the Ceiling: these should be five Foot and a half in Breadth, and Piers of Brick must be carried up between them for the Support of the Roof.

We have said that the Front should be as nearly as may be all Glass, consequently these Piers should be as narrow as possible. They would require more Breadth if any Rooms were to be carried up over the Greenhouse, but we have declared against that Practice: therefore slight Piers will answer, and these should be thin'd off obliquely from the Front inwards. In this Case they will be of very little Disadvantage, and they will give an Air of Strength to the Building.

Every Part of the House must be contrived for Warmth, and for Defence against the Frosts. In the first Place the Floor should be raised fifteen Inches above the Ground, that no Damps may come that Way; and the next Care must

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be

Sept. be of the Sashes. They should be hung in firm Grooves of seasoned Wood-work; and their Frames must be solid and well jointed. They must be wrought so as to move easy, and to remain very firm in their Places: no Wind should be able to shake them: and they must be secured by Sand Bags wherever the Air could get in.

The Gardener must have it in his Power to let in Air in any Manner and Degree he pleases, but it must be thoroughly kept out, except when let in by his Choice.

The Sashes being secured, the Floor, Walls, and Roof must be considered in the same careful Light; all must be sound, firm, and solid; and near the Back in the Wall of the West End, there must be made a very narrow Door-way, which should have a double Door, that the Gardener may let himself in when the Weather is severe, without admitting in much Wind.

The Walls must not be built of the common Place Bricks, but a Price allowed for the good grey Stocks, and the Mortar must be well wrought, and the Work well done. Two Bricks and a half ought to be the Thickness of the Back Wall, and two Bricks that of the Ends.

Sept. The Floor is best laid with paving Tiles; and the Roof should be slated: the Work all well done, and the Materials sound and good. The Addition of Expence in this is trifling, and the Advantage very great. There is no Security in any Thickness of Walls when the Materials are loose and spongy, for the Frost will get through them.

As there will be Room under the Floor, it will be advisable to carry a Flue quite thro' it with two Returns. The Fire Place should be in one of those Sheds we have directed to be made behind, and that nearest the West End will be best; from this it should be carried to the Front, and along to the East End, and thence to the Back again; where Funnel must be raised to carry off the Smoak.

We have said that it is very seldom there will be Occasion to make a Fire in these; and it should never be done except when necessary.

The Walls, and Floor, and Roof being constructed with the Care we direct, it will never be wanted in common Winters: but unless there be such a Provision against such as are very severe, the greatest Part of the Plants may be lost.



CHAP. II.

Of finishing the GREENHOUSE.

THE double Door, which we have directed to be made for the Entrance into the Greenhouse at Times when it is not proper to open any of the Glasses in Front, must be made so as to shut perfectly close, and turn easy on the Hinges. And the Glasses in Front must have Shutters, in the Construction of which the Carpenter must shew all his Skill.

We have directed the Piers to be sloped away on each Side inwards, and this will give on each Side of the Sash an oblique Space to receive the half of the Shutter. Let the Carpenter understand, that the Corners of the Pier were cut off to prevent their interposing, and shading the Plants from the Sun; and let him take Care not to do the same Mischief by the Edges of the Shutters.

They must be made to fold in a Compass somewhat narrower than the Flat of the Brick Work; and they must be so hinged as to fall close, and framed to prevent warping. They must be so made as to meet very close in Front, and no Cracks must be permitted between the Pannels.

The best Way to know that they are secure, is to shut up the whole in a bright Day: where Light can get in, there Cold can

come also; and there is no Way to be secure, but by shutting out that.

This is an essential Point; for when the Shutters are contrived so well as this, they will save all farther Trouble of defending the Plants in common Weather in our Winters.

When it is worse Recourse must be had to lighting up some Candles in the Greenhouse, while the Shutters are kept close; or if this does not answer the Purpose, a Dutch Fire of a couple of Turf may be kept mouldering without Smoak or any offensive Consequence from Day to Day so long as it continues. If this does not prove sufficient, the Flues will always answer. They should never be made use of, but when these gentle Means are found ineffectual; and then no longer than the Continuance of the severe Weather; with this Regulation, and in this careful Use, the Flues will be of the greatest Service to the Greenhouse; a Shilling's-worth of Fuel will save a vast deal of Labour, and answer the Purpose a great deal better; for there is no End of the Trouble of sheltering with Mats; and when all is done the Defence is very imperfect, and the Condition of the Air within is altogether uncertain: whereas in this Method, by actual Fire, 'tis subject to perfect Regulations;

Sept. Regulations; it may be continued as long as required, and made to cease with the Occasion.

Those who have not this Advantage in their Greenhouses are to be warned against a common Error, which is the Use of Charcoal: every one knows how fatal and suffocating the Steam of burning Charcoal is in a close Place; and no Place can be closer than a good Greenhouse shut up in the cold Season.

We have on many Occasions observed how essential free and pure Air is to Plants; even as much as to Animals: Reason may therefore inform those Persons who have thought of this Method, that they must greatly prejudice the Plants by it; indeed I have seen the Effect of the Charcoal more than once, more hurtful than the Frost would have been.

The Branches of the several Trees have grown yellow, and droop'd at their Ends; the Leaves have fallen off from the Plants; and a great many have been destroyed, while the Remainder have been so injured, that nothing but a Course of very good Management for the succeeding Year could restore them. Therefore

Sept. those who have not the Advantage of Flues under the Floor of their Greenhouse, should remember that the first Defence against the Frost is lighting Candles ten, twelve, or more, according to the Extent of the Building: if this is insufficient, the next is to keep up a small mouldering Fire of Peat or Turf, whose Steam is inoffensive; and if this be not enough, a German Stove should be brought in, and placed near the Centre of the back Wall.

Those who are to build them now, will find it much better to make Flues at once, than to trust to these uncertain and troublesome Methods. The Expence is not great in making them; and as to Fuel, a very little serves when they are wanted; and this is not once in many Years.

Thus much regarding the warming of a Greenhouse we have been to led to say in this Place, to set before the Reader in its true Light the Advantage of making Flues. These should be about twenty Inches deep, and eight broad; and in the Course we have directed for carrying them on, they will affect every Part of the Room.

CH A P. III.

Of the Inside of the WALLS.

WE have now raised our Greenhouse from the Foundation and Floor to the Roof. The Back and Sides are strong and close, and the Sashes secure; but there yet remains a great Article, which is the covering the inner Surface of the Walls.

These are at present plain Brick, and it is the Custom to plaister them in a rough Manner, or to wainscot them cheap and coarsely. There is nothing in which a little Expence is so ill saved.

Let the Gardener understand that Light and Heat in the Day-time always accompany one another; and it is fit he know farther, that in order to send back the Light and the Heat with it in the fullest Manner, they should fall upon a perfectly smooth white Surface, which reflects the most Light of any Colour; being indeed an Assemblage of them all: and that the Smoothness of the Surface returns them regularly. Wainscot, though an expensive Thing, is by no means proper, for the Heat and Moisture will make it subject to warp; and this defeats the Purpose.

The common Plaistering and White-wash are continually cracking and peeling; the Surface is always irregular at first, and it soon decays. 'Tis also disagreeable in that it rubs off upon the Cloaths of those who go in; and upon the Plants. It is too much liable like the Wainscot to the Effect of Heat and Moisture;

and the Vapour of it is hurtful to the Plants.

Let the Proprietor allow the Expence of Stucco to the whole inner Surface of the Walls and Cieling, and let the Plaisterer be directed to work it with a perfect smooth Surface. When this is well dry'd, let it be painted with the brightest white that can be laid on, and it will thus be finished for a great while. When the Smell is once over, it will return no more. The whole Surface will reflect the Light in a perfect and uniform Manner; and the Plants will in this Respect have all possible Advantage.

We are not of the Opinion of those who fancy, that the painting of a Greenhouse with a dark Colour will make the Leaves fall off from all the Plants; but the Benefit of this Method of giving a true white Surface is certain; nor is any Thing so agreeable to the general Use of the Place.

The Plants are to be disposed in this Greenhouse so as to form a Kind of rising Surface from the Front to the back; and they are to be placed at some small Distance from one another: this Method of disposing them we have given in a preceding Number, where we spoke of taking in the Plants at Autumn; but this is one Consideration in favour of that pure and perfect white we direct for the inner Surface. The Trees and Plants, as so placed, make one Mass of green, and for that Reason they are not seen distinctly.

On

Sept. On the having a clear and proper View of each the Beauty of the Arrangement depends; nothing favours this like the pure white behind: it serves as a Ground to throw out the several Objects, and the Space between Leaf and Leaf being thus marked exactly, the Form of all is seen.

Thus may a Greenhouse be compleatly finished, but there will still be something wanting for those whose Curiosity extends to the full Bounds, and who raise all the Kind that can be preserved in this Way.

Among what we class as Greenhouse Plants, some are of a more hardy, and others of a more tender Texture: and there is also a great Difference in Nature between the common Shrubs and herbaceous Kinds, and those we call succulent.

It will be proper to preserve these distinct from the Generality of the Greenhouse Plants, and from each other, and this in separate Buildings.

Sept.



C H A P. IV.

Of the Wings of a GREENHOUSE.

IT will be proper to keep the succulent Plants entirely by themselves in one Building; and the tender Kinds that will just live without a Stove in another: these may be small, because the Number of Plants in each Kind cannot bear any Proportion to the Generality of the others; and the Smallness of the Place is one great Advantage to the tender Kinds, because with due Management, the Air will for that Reason be warmer.

These two Buildings should be connected to the two Ends of the Greenhouse, and constructed in the same Manner with all that careful Attention to the keeping out cold, and all the necessary Regulation in the opening. Under each of these there should be Flues, as under the principal Greenhouse; and they must be built strait in a Line with it, only thrown a little back.

This will give the Air of a regular Building to the Greenhouse, making it consist of the Centre and two Wings: and will provide for every Thing that can be required under that Head.

It has been advised by some to bring the two Wings forward in an obtuse Angle, and by that Means to enclose, in a Manner, a Piece of the Ground; but this breaks in upon the Uniformity of the Garden, takes off the Beauty of the Building, and has no real Advantage. A Basin of a Yard square in the Centre of such a Piece, and a Parcel of Flower Borders about it, are very much beneath the Taste of modern Gardening; nor is there any thing we

desire so much as Freedom.

These are Cautions to the Gardener that he be not misled by antiquated Instructors. In the Way we mention all will be free and open, and all beautiful. The Greenhouse, consisting of the main Body, and Wings in the same Direction, will be a beautiful Object from other Parts of the Garden, and every Advantage of Culture will be secured to the Plants.

The main Building will hold the Generality in more perfect Order, because as so many will be removed into the Wings, those which remain will stand more free; and the Smallness of the Wings will keep the tender Kinds the better: when a Fire is needed it must be very little; and there are few Winters which require it. There need be no particular Directions laid down for the Construction of the Flues. They are to be the same with the larger in all but Size.

One Caution it may be very useful to add for those who have Greenhouses already, and who find the Number of Plants increase upon them, and that they want Room. The best Way of enlarging the House is by adding two such Wings; and under these there should be Flues, though there may be none under the main Building; by this Management the tenderest of the Plants may be removed into one Wing, and the succulent Tribe into the other as we directed; and they will be secured at the same Time that Room is made in the Greenhouse for the rest, and for the Reception of new Plants.

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E D E N :

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R L I V .

For the last Week of *S E P T E M B E R*.

S E C T I O N I .

F L O R A, or the P L E A S U R E - G A R D E N :

C H A P . I .

Flowers and Curious Plants now in their Perfection.

I. LATE BULBIFEROUS LILLY.

Sept.

Pl. 54.
Fig. 1.

THE Gardener is not unacquainted with the Beauty of the *bulbiferus Lilly*, nor with the singular Method taken by Nature for its Propagation, whence it obtained that Name : this which we here propose to him, possesses that peculiar Quality in a degree superior to the common Kind; and is distinguished farther by its strong Colour, and late flowering.

The Student in Botany is to know that, as this is no more than a seedling Variety of the common *bulbiferous Lilly*; so that Plant in its most usual State is to be referred to the common *Orange Lilly*, being only an Accident of Nature in the Growth of that. Thus Varieties, before they are considered under their separate Parts, are to be reduced to the proper original Species; and this is Botany.

In this State wherein we describe the Plant, the *Dutch*, to whose Labours we owe it, call it *Lilium bulbiferum serotinum*: the late bulbiferous Lilly; in the more usual Form Authors name it *Lilium bulbiferum latifolium*; and in the original State without the Bulbs, *Lilium purpureo-croceum*.

The Plant is one of those in which afford the Gardener great Room for his Operations; for there is scarce any more fruitful in Varieties.

C. BAUHINE, who takes the Lead among the Botanists of the last Age, mentions beside the broad, which is the common, a narrow leaved bulbiferous Lilly, a Dwarf, and a hoary Kind.

Numb. LIV.

He also enumerates as distinct Species of the Kind without Bulbs, a smaller, and one with a double Flower. He has therefore from this one Plant, the *Orange Lilly*, made eight; and too many have followed him: for nothing is so readily received as Error.

LINNÆUS refers all these to the one original Head, which he calls *Lilium foliis sparsis corollis campanulatis erectis intus scabris*: the scattered leaved Lilly, with bell-shaped upright Flowers, rough within.

The Root is large, bulbous, but composed of numerous loose Scales; white and juicy.

The Stalk is firm, thick, upright, a Yard high, frequently a little flattened, striated, and of a pale green, tinged variously with yellow, brown or purple.

The Leaves stand irregularly upon it, and are numerous: they are oblong, moderately broad, undivided at the Edges, and sharp pointed; of a deep green Colour, often tinged with brown, and marked with strong Ribs lengthwise.

The Flowers are very large and beautiful; they crown the Stalk two or more together, and they are wide expanded, and of a deep Crimson, mixed with a Tinge of Orange: the rising Spots on the Inside of the Petals are of a deep Blood Colour, and there is a Richness in the whole Flower exceeding very much the other Orange Lillies.

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The Form of the Flower is that of the common Lilly, it rises without any Cup from the Head of the Footstalk, and is composed of six long and large Petals, which unite at the Bottom in a small campanulated Base, and at the Extremities they are thick and fleshy.

In the Centre stand six Filaments with large oblong Buttons, and in the Midst of them a single Style. This is terminated by a thick triangular Head; and rises from an oblong Rudiment of a Seed-vessel marked with six Ridges. This afterwards ripens into a large Seed-vessel of the same Form, large, and formed of three Valves, with three Cells loaded with Seeds in a double Series.

The six Filaments shew the Plant one of the *Hexandria* of LINNÆUS, and the single Style one of the *Monogynia*.

Thus is the Plant entire and perfect as others; but there yet remains to be explained a very particular Part, or Appendage; the Bulbs, whence it obtained its Name bulbiferous: these are certain solid Lumps which appear in the Bosoms of their Leaves. Their Form is oval, or nearly so; their Texture loose, and their Substance juicy: they have no Footstalks, but adhere to the main Stem of the Plant by their Base, just where the Leaf also adheres; and their Colour is green, tinged like the Stalk and Leaves, occasionally with yellow, brown or red: they have an Aspect different from what is seen in Nature, in the common Course of Vegetation; and there is nothing more worth the strict Enquiry both of the Gardener and Botanist, than their Purpose and Formation.

To understand their Nature, let the Student consider and see that he rightly know those Parts of other Plants to which they have Resemblance. They contain a Plant in Miniature, as the Bud of a Tree does the several Parts which it shews when unfolded in Vegetation: and they have not done amiss who gave them the Name of Bulbs; for although placed upon a different Part of the Plant, they have the same Nature, Construction, and Properties.

The Bulb is a compact Substance including the Embryo Plant, and defending it from Injuries till the Time of its growing up.

The Bud upon a Tree in the same Manner contains and defends a young Plant, or at least all except the Root; and is formed for the same Purpose, and in the same Manner.

LINNÆUS is so sensible of this, that he calls the Bulbs of Plants, and the Buds of Trees by the same Name *Hybernaculum*, and distinguishes them only by the Part of the Plant or Tree to which they adhere; the Bulb being fixed to the lower Part of the Stem, and the Bud to the upper; or to the Extremities of the Branches.

As only a certain Number of Plants have Bulbs, so only a certain Number of Trees have these regular Buds. The black Alder, the Alaternus, and many others utterly want them; and, in general, they are not found on Plants in extream hot or extream cold Countries.

As the Buds of Trees are composed of various Substances, Films, Scales, Footstalks, and Rudi-

ments of Leaves: the Bulbs have also their various Structure, some being composed of Scales, as the Lillies; some of Coats, as the Onion; and others solid, as the Tulip.

These Tubercles upon the Stalk of the Plant now under Consideration, are true Bulbs of the solid Kind: they have the Rudiments of Scales about them; but these do not shew themselves till long after: as the outer Coats of the solid Bulbs are not seen till they are full grown. They are therefore Bulbs above Ground; or if the Botanist so please to call them, Buds from the Stem.

We have shewn how little Bulbs and Buds differ from one another; and there is no more Difference between these and the rest. If they are compared with the bulbous Roots, they differ only in that their Substance is more compact; that is, they rather resemble the central Part than the whole Bulb. If compared on the other hand with the Buds of Trees, they differ in nothing but that as those Buds are fixed to their Place, and nourished by the general Root of the Tree, these fall off, and take root of themselves.

Although this Process of Nature for the Encrease of Plants is not common; neither is it peculiar to this single Plant: the bulbiferous Saxifrage is well known; and differs from the common Saxifrage in nothing but that it has these Bulbs in the Bosoms of the Leaves: it is an Instance very parallel, for it shews this peculiar Provision of Nature may be given without altering the Species. The *Toothwort*, or *Dentaria Heptaphyllos*, is another Instance of the same Kind; and there are others.

These Bulbs appear with the Leaves, and swell and obtain soon after their due Bigness: after this they drop off, and taking root, produce new Plants; in the same Manner as Seeds would do; but in a much quicker Manner.

In the younger Plants of this Lilly we find these Bulbs all the way up the Stalk, scarce any Leaf from the Bottom to the Top being without them: but in the older which have come to the full Strength of flowering, they are fewer, and they appear principally, if not solely, in the Division of the Stalk, at the Top, for flowering.

This shews, in some degree, the Intention of Nature in their Productions. The *Orange Lilly* rises slow from Seed to flowering: in all this Time, according to the common Course of Nature, no Step could be taken toward the Encrease of the Plant; but all this while there are these Bulbs in the Bosoms of the Leaves: they are slight the first Year or two, and imperfect; but afterwards they grow strong, and are fit for the Propagation of the Plant.

They continue to be produced in Abundance till the Plant has come to the full Strength of flowering; but after that they grow from Time to Time less numerous, till upon a strong Stem there will not be more than four or five.

Some who affected to understand Nature better than their Attention would reach, have said that the Seeds of this Lilly would not produce the Plant.

Sept.

Sept. Plant. They fancy'd this, upon the Principle of Nature's doing nothing in vain; and they supposed these Bulbs must be useless if the Seeds grew.

The Matter would have been much better explained by a longer Observation: they would have found the Purpose of Nature in their Production, was to supply the Place of Seeds during the Growth of the Plant; and that although the Principle of their Production continued afterwards, yet it became very limited in Quantity, from the Time the Growth was sufficient for the ripening of Seeds.

Culture of this LILLY.

It is a Native of the warmer Parts of *Europe*; but it bears without Hazard the open Air, and open Ground in our Gardens; and requires no Compost: for nothing suits it better than the common Mould.

There are in the Gardener's Choice three Methods of cultivating or raising the Plant; the first by Off-sets from the Root, the second by Seeds, and the last by these Bulbs produced in the Bosoms of the Leaves.

If we wanted Varieties, we should propose the Method by Seeds, for that is the true Source of them; but the Flower is naturally so beautiful, that unless we wished to change for the worse,

one could not seek any Thing of that Kind. Therefore this Method, which is slow and tedious, and productive of no particular Good, is to be rejected.

The Propagation by Off-sets is easy, but they weaken the main Plant; for it must stand two or three Years in order to produce any Quantity, and this never fails to impair the Beauty of the Flower.

For these Reasons the Bulbs which Nature produces in the Bosoms of the Leaves, are preferable to any other Method of Propagation. They are to be taken off when perfectly ripe, and they will flower in full Lustre the second Year.

The Soil is to be the common Garden Mould. The Bulbs are to be planted at a Foot Distance, and covered a Quarter of an Inch; and not to be removed any more till after flowering.

They will require no Care beside the common Articles of weeding and watering, and when they have flowered they should be taken up. About the latter End of *September* is the best Time; the Bed should be new dug, the Roots cleaned from their Off-sets, and then planted again at the same Distance.

They will thus flower in perfect Beauty from Year to Year, and they will always produce Abundance of new Bulbs from the young Plants, so that sowing is altogether needless.

2. SCARLET MUNTINGIA.

Pl. 54.
Fig. 2.

The Curious in botanical Researches have been some Time acquainted with the white fruited *Muntingia*; though till the great Reformer of the Science, LINNÆUS, they did not know it by that, or by any other distinct Name. PLUMIER had indeed called it so; but his Authority, however great his real Merit, was not sufficient to establish it; and the World called it by the first rude Denomination, *Calabura*. This is yet more new, nor is the Difference in Colour all, the Leaves are as different.

HERMAN retaining the old Name, *Calabura*, adds, *rubra foliis laurinis*: for the Distinction of this Species: Bay leaved *Calabura* with red Fruit.

COMMELINE, though much amiss, refers it to the *Mespilus*; adding, to distinguish it from the numerous others, *Americana laurifolia glabra fructu rubro mucilaginoso*: smooth Bay-leaved American *Mespilus* with red mucilaginous Fruit.

The Characters refer it to the *Muntingia* of LINNÆUS; and as the white Kind has but one Flower on each Footstalk, and this several, we may add as the Distinction, *pedunculis multifloris*: many flowered *Muntingia*. The Colour of the Fruit, though an obvious, is not a scientifick Character.

It is a large and spreading Tree of irregular Growth: the Branches numerous, and crooked; and the young Shoots redish.

The Leaves are large and beautiful, oblong,

broad, and undivided; their Colour on the upper Side is a deep, and on the under a paler green.

The Flowers are numerous, large, and of a delicate pale blue; they stand in Clusters at the Extremities of the Branches, upon divided Footstalks, and make a very glorious Figure. The Fruit which follows is no less beautiful, its Colour a fine scarlet.

The Cup of the Flower is of one Piece, hollowed at the Base, and divided into three, four, or five Segments at the Edge.

The Flower is composed of five Petals, and these have long narrow Bases.

In the Centre stand numerous Filaments, with roundish Buttons: they rise from the Receptacle of the Flower, and surround a rounded Rudiment, which is crowned with a pentangular Head, without a Style.

The Fruit is round, and marked with the five Divisions of the Head, and contains many small roundish Seeds.

The Number and Place of the Filaments shew the Tree one of the *Polyandria* of LINNÆUS; and the single Head, that it is one of the *Monogynia*.

Culture of this MUNTINGIA.

It is a Native of the warmer Parts of *America*, and with us will not succeed well out of a Stove.

The Soil must be one of the light, and not over rich

Sept. rich Composts, and it must be raised from the Seeds sown in a Pot, and brought to shoot in a Bark-bed.

The young Plants when three Inches high must be removed into separate Pots; taking them up with great Care, and with as much of the original Mould as will hang about them; and wa-

tered carefully:

These Pots must be again set up to the Rim in Bark, and the Glasses shaded till they have taken good Root in the new Mould: after this they must at Times be allowed a little Air; and when of a due Size, the finest Plants must be taken into the Stove.

Sept.

3. NARROW LEAVED OTHONNA.

Pl. 54. This is a singular and pretty Shrub; low, Fig. 3. branched, full of Leaves, and at the Season over-spread with Flowers. The Antients were not acquainted with it; nor have those Writers who first named the Plant, called it by this Name.

We have before acquainted the young Botanist, that LINNÆUS separated from among that confused Number of Plants, the Authors before him had called *Jacobæa*, several which agreed in many peculiar Characters under the Name *Othonna*; this Plant is one of them. The most striking Distinction is, that the Cup which in the proper *Jacobæa* is scaly, in this Plant is formed of one Leaf, and only divided by several Indentings at the Edge.

It has been with great Justice, that LINNÆUS dispersed the Plants joined by less accurate Writers, under the Name *Jacobæa*, into several Genera; but they all preserve that scaly Cup, except those ranged by him as *Othonna*'s.

COMMELINE has called this *Jacobæa Africana frutescens lavendulæ folio latiore*: shrubby African Ragwort, with a somewhat broad Lavender Leaf. The Characters very distinctly shew it an *Othonna*, and its proper Distinction is, *foliis linearibus*: Linear leaved *Othonna*.

The Root is redish, divided, hung with innumerable Fibres, and spreading.

The main Stem is thick, woody, and covered with a pale brown Bark. The Branches are pale, and the young Shoots green.

The Leaves are numerous, and placed irregularly: they are long, narrow, sharp pointed, and

of a pale green; a little hoary, and of a firm Substance.

The Flowers are numerous and yellow: they stand in irregular broad Tufts at the Extremities of the Branches, and are of the composite radiated Kind.

The Cup, as is singular to the *Othonna*, is simple, composed of one Piece, hollow at the Base, and divided into five Segments at the Rim.

The Disk of the Flower is composed of tubular Floscules: these are short, and divided at the Rim into five Segments; and in each there are five short Filaments with convergent Buttons surrounding a single Style.

The Rays are about eight, but the Number is not certain; they are Female Flowers. Their Form is long and lanceolate, and they are cut into three Parts at the End. They have at their Base only the Rudiment of a Seed, with a single Style terminated by a large split Head.

The Seeds stand naked in the Cup, and they are only a single Series, or Circle, for the Female Flowers alone bring any to Perfection.

From this the Class and Place of the Plant will be easily known: the convergent Buttons declare it one of the *Syngenesia*; and the Seeds ripening only from the Rays, or Female Flowers, shew it to be one of the *Polygamia necessaria*.

The Impregnation of the Female Flowers from the Buttons of the tubular Floscules, is superfluous, when those Floscules ripen Seeds themselves; but in this Case, if there were not that Provision, there would be no ripe Seeds.

4. OVAL LEAVED CORDIA.

Pl. 54. The medical Reader has been accustomed to Fig. 4. hear of this Tree under another Name: it bears the Fruit once in frequent Use called *Sebesten*; and has thence been usually called the *Sebesten*, and the manured *Sebesten* Tree; *Sebestena*, and *Sebestina Domestica*, in Distinction from the wild.

C. BAUHINE very properly joins these imaginary distinct Species under one Head, and calls the Tree *Sebestena sylvestris & domestica*: the wild and Garden *Sebesten*. COMMELINE calls it *Sebestena domestica sive myxa*: the Garden *Sebesten*, or *Myxa*; and in the *Hortus Malabaricus*, it is called *Vidi maram*. LINNÆUS refers it to his Genus *Cordia*; and adds as the Distinction of the Species, *foliis subovatis serrato dentatis*: *Cordia* with

oval dentated Leaves.

It is a large Tree of irregular Growth, branched, spreading, and full of Leaves.

The Bark of the Trunk is rough and brown; on the Branches it is paler; and on the young Shoots green.

The Leaves are very beautiful; their Form is nearly oval; their Colour on the upper Side a deep green, and on the under paler; and they are dented at the Edges, and pointed; the Ribs sink deep, and the whole Surface is by that rendered somewhat uneven.

The Flowers are numerous, small and white; they grow in little Clusters at the Extremities of the Branches, and are succeeded by a kind of dry Berry

Sept. Berry of an oval Form, pointed, and covered by the Cup of the Flower.

This Cup is hollow, formed of one Piece, and terminated by three Points at the Verge.

The Flower is formed of one Petal, and is narrow at the Base, and broader all the way to the Rim. The tubular Part is of the Length of the Cup: the Rim is cut into five obtuse Segments.

The Filaments are five, and they are smaller to the Top; their Buttons are long and thin. The Style is of the Length of the Filaments, single toward the Bottom, but split at the Top; and each Division is again split into two Parts, all crowned with round Heads. This singular Style rises from the Rudiment of the Fruit, and fades soon, but the Cup remains.

The five Filaments declare the Plant to be one of the *Pentandria* of LINNÆUS; and the Style being single at the Base, LINNÆUS refers it not-

withstanding, the singular Division of the upper Part, to the *Monogynia*.

Culture of this CORDIA.

It is a Native of the East, and requires the Heat of a Bark-bed to raise, and of the Stove to keep it in Perfection. It will live under less Management, but not thrive as when the Air is suited to that of its natural Climate, which is the East; *Egypt* and *India*.

The Method of raising it is from the Fruit, which should be obtained as fresh as possible, and sown in a Pot of light Compost. This must be set in a Bark-bed to the Rim; and when the Plants appear, they must be treated as we have directed for the others. They must be removed into separate Pots, watered, shaded, and by degrees habituated to the Air in the Middle of the Day, and then placed with the other tender Plants to take their Chance.

5. LATE POMPONIAN MARTAGON.

Pl. 54.
Fig. 5.

The peculiar Variety of the *bulbiferous Lilly*, which we have described first in this Number, stands as an Instance that not only the Colouring of a Flower may be altered in a seedling Variety, but the Season of blowing. This *Martagon* confirms that Doctrine: it differs in nothing from the common early *Pomponian Martagon*, but that the Colour of the Flower is a higher scarlet, and the Time of flowering later.

All the Writers on Botany have named the Plant in its usual State: they call it, *Lilium Martagon angustifolium*. CLUSIUS, *Lilium rubrum minus*; and C. BAUHINE, *Lilium floribus reflexis angustifolium*: the narrow leaved Lilly, with reflex Flowers.

The Student is to be told, that the grassy leaved Lilly, and the scarlet narrow leaved Lilly, of the same Author, are only Varieties of this Plant; and that the latter of these more than any other, resembles the present Kind. Our Gardener knows the *Martagons* are all properly Lillies.

LINNÆUS refers this to the Number, and adds as the Distinction of the Species, *foliis sparsis subulatis, floribus reflexis corollis revolutis*: Lilly with scattered subulated Leaves, and with hanging Flowers, whose Segments turn up.

The Root is very singular in this Species, it is not composed of thick Scales as in the other Lillies, but coated as an Onion; this GMELIN very justly adds to its Character.

The Stalk is simple, firm, upright, two Foot and a half high, round, striated, and of a pale green, tinged with brown or yellow.

The Leaves are extremely numerous, and they stand irregularly: they are of a moderate Length, narrow, and in some degree three square; sharp pointed, and of a strong and lively green.

The Flowers are very numerous and beautiful: they crown the Stalk, and rise also from all

Nº. 54.

the Bosoms of the upper Leaves. They have long Footstalks, from which they hang drooping; their Form is that of the common *Martagon*, but their Colour a high and perfect scarlet spotted with black.

Each Flower is composed of six long Petals which unite at the Base, and turn up at the Ends, and at the Bottom of each there is a remarkable Line, which is the Nectarium.

The Filaments are six; they are shorter than the Petals, and they have oblong Buttons.

The Style is single, and its Head triangular and thick; and the Seed-vessel is oblong, and marked with six Furrows.

The six Filaments and single Style shew it one of the *Hexandria Monogynia*.

Culture of this MARTAGON.

The Seeds of the early or common *Pomponian Martagon* raise this; and the same Method must be taken in its Culture. It is a Native of the warmer Parts of *Europe*, but thrives perfectly well in the open Ground in our Gardens. A warm Spot must be chosen for it, and the Roots must be planted deep to defend them from the Severity of our Frosts, and they must not have a moist or too rich Soil.

The best Compost for them is rich Pasture Earth, with a little Wood-pile Mould, and rotted Cow Dung. This should be mixed up in Spring, and it will be ready to receive the Seeds in Autumn.

These must be saved from strong healthy Plants, and dried on a papered Shelf with all the Care we have directed for other Kinds. In Autumn a Bed must be made up in the Seminary with this Compost, chusing a Spot that is open to the South East, and defended from all the cold Quarters.

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Sept. The Surface of this Bed must be raked level, and the Seeds scattered over it with an even hand. They should be sown thick, for many fail.

When the Plants come up they must be thin'd and weeded; and at Autumn, when the Leaves decay, half an Inch of fresh Mould must be sifted over the whole Bed.

In this Manner they are to be kept one Year more, and it will then be Time to remove them.

A Bed must be made up with the same Compost, in some sheltered Part of the Garden; and the Roots, taken up soon after the Leaves have faded, must be there planted at ten Inches Distance, and covered with two Inches of Mould. Here they are to stand till they flower, sifting over them half an Inch of more Mould every Autumn, and a Quarter of an Inch every Spring.

There will be found a great deal of Variety among the Flowers; some will be of a darker, some of a pale Tinct; some perfect red, and others yellowish.

Sept. The finest must be marked, and the rest, when the Leaves are decayed, must be taken up, and planted in other Places.

The fine Flowers which are left will have good Room by this, and they must at the Approach of Winter be covered with another Inch of the same Mould. Their proper Place in the Earth is about five Inches under the Surface, they never fail to shoot strong through this; and the burying them thus is their best Defence during the Winter.

The next Year they will shew their Flowers in Perfection: and from this Time they are to be treated as others of the same Kind. They should be taken up every Year as soon as the Stalks and Leaves are decayed, and planted again in a fresh Bed of the same Soil: they must be sheltered from the North Winds, and open to the Morning Sun, but defended from that of Noon-day; and they will thus produce Abundance of Flowers extremely elegant, and very lasting.

6. BROAD LEAVED STAR HYACINTH.

Pl. 54. We have before had occasion to acquaint the
Fig. 6. Gardener, that the Plants universally known by the Name *starry Hyacinths*, are by no means of the proper Hyacinth Kind, but Species of the *Scilla*.

This Name has been so long used solely for the medicinal Squill, that there appears a Strangeness in applying it to a Garden Flower, but there is the Authority of LINNÆUS for it; and what is much more, the Warrant of Nature.

This is a Kind distinct from the others we have named, and the Writers on Flowers have all perceived it: they have called it *Hyacinthus stellaris Liliifolius*. C. BAUHINE names it, *Hyacinthus stellaris folio & radice Lili*; and others, *Hyacinthus latifolius stellaris*. LINNÆUS distinguishes it by the Root, which is altogether unlike the others. He calls it *Scilla radice squammata*: the scaly root-ed Scilla.

The Root is rounded, large, and white, and is composed of Scales in the Manner of the Lilly Root, but thicker and shorter.

The Leaves are numerous, broad, oblong, obtuse, and of a strong green; the middle Rib is pale, and sometimes the Ends of the Leaves are tip'd with brown.

The Stalk is round, juicy, and a Foot high. There are no Leaves on it; the Colour is a pale green, tinged toward the Bottom with red, and the Top is decorated with a great Number of Flowers. These are large, and of a delicate white, sometimes tinged a little with Flesh Colour.

They have no Cup: they rise naked from their Footstalks, and each is composed of six Petals which stand open.

In the Centre are six short Filaments, crowned with oblong incumbent Buttons, and in the Midst of them a single Style with a simple Head. This rises from a roundish Rudiment of a Seed-vessel; which, as it ripens, becomes more oval, and is marked with three Furrows. It is formed of three Valves, and divided within into three Cells, in each of which are contained several roundish Seeds.

Culture of this HYACINTH.

It is a Native of *Spain*, and other warm Parts of *Europe*; but it will bear the open Air very well with us in a well chosen Situation. Its Culture is in all Respects the same with that of the other *starry Hyacinths*, which we have given at large in a preceding Number, only that the Soil must be rendered more loose and dry by mixing a good Quantity of Sand with it; and the Roots when they are taken up after flowering, should be immediately planted again in a fresh Bed of the same kind of Soil.

In this Manner it will flourish in great Perfection: the Roots will preserve the Principle of Life, if they be kept out of the Ground several Months; but I have always found they flower best when they are planted again as soon as taken up.

There will be Abundance of Off-sets to propagate the Plant in that easy Way; and from Seed there will be beside this white, which is the most elegant, the common Variety of blue, and of pale red Flowers.



3. Narrow leaved
Othonna

1. Late bulbiferous Lilly

2. Scarlet Muntingia

4. Oval leaved
Cordia

5. Late Pempsonian Martagon

6. Broad leaved Star Hyacinth

E. J. Allen sculp.

Sept.

Sept.

S E C T. II.

Of the Construction of STOVES.

THE Construction of the Greenhouse we have given in the preceding Number: that of the Stove naturally follows. This is an Article much less understood, and consequently much worse practised than the other.

Those who have succeeded best make it a Point to keep their Knowledge to themselves; and from this, as well as the reserved Turn many have of late taken who have curious Plants, I fear the same false Taste is growing in Botany, that has long disgraced the Study of Medals: this is a Desire that none should possess those valued Productions but themselves. What these preserve secret it is our Purpose to disclose: he who has a true Sense of the Study will no more keep secret any Improvement in it; than the Physician Honour a new Remedy.

Whatever we have observed that is useful in this great Article of curious Gardening, we shall deliver freely: the Reader has a general Idea of the Stove already from what we have said treating of the Pine-apple and some other Kinds: and we here propose their several Constructions; which that will lead him the more readily to understand.

Plants may be arranged in respect of their Hardiness under three general Kinds, 1. Those which bear the open Air in our Climate all the Year. 2. Those which require Shelter in Winter, but usually no artificial Heat; and 3. Those that require Shelter and artificial Heat. The first are the hardy, the second the Greenhouse, and the third the Stove Plants. Each Class is again subject to many Subdivisions, for the Degrees of Tendernefs are innumerable. This we have shewn in the other Kinds, and we now come to examine it practically in regard of those called Stove Plants, from the absolute Necessity there is of artificial Heat to keep them in this Climate.

These, according to their Nature and original Climate, require various Degrees of that Heat, but all of them a Temperature of the Air, which cannot be maintained otherwise than by this Assistance of actual Fire.

For all these Stoves are to be erected, and there

should be also Beds covered with Glass, and assisted in the same Manner for the raising of them. One Building may answer the Purpose of these several Stoves, and it will be better that the separated Degrees of Heat, necessary for distinct Sets of Plants, should be kept up in Divisions of the same Building, than in distinct Edifices.

This gives the general Idea of the Construction of Stoves. There are to be Buildings, or rather there is to be a Building glazed in Front, and exposed to the South in the Manner of the Greenhouse: but it is to be glazed also at the Top, and it must have Fire-places and Flues in the back Wall. It must be divided crosswise into several Rooms by Glass Partitions, in each of which there may be preserved a certain proportioned Degree of Heat; and at its Ends must be placed those glazed Beds, which may be considered as a Kind of small Stoves for the Supply of the other Parts.

This is the general Idea of the Building, in which the Plants being potted with the Composts proper for each Kind, are to be placed either upon a Stand in the open Room, or in a Pit of Tan in the Centre. This makes the Distinction between the *Dry-Stove* and the *Bark-Stove*: in each the Heat is to be regulated by a Thermometer, hung up at a Distance from the Fire Place in every Division; and the Entrance must be through some Shed, or out of a Greenhouse, that the cold Air may not rush in on opening the Door.

The Top must be occasionally covered to keep out Wet, and sometimes to defend the Plants from the too powerful Sun; and for this Purpose there must either be moveable Shutters, or the Contrivance of a coarse Canvas to let down or draw up occasionally.

The Plants will thus live in an Air suited to that of their natural Climate; and they must be refreshed with Water at Times.

He who comprehends thus much of the general Nature and Use of a Stove, will easily enter into the Construction.

C H A P. II.

Of the BARK-STOVE.

Whoever has his Choice of the two Kinds of Stove, will be easily brought to prefer that with Bark to the dry, from the Consideration of their natural Difference. There is a Harshness in the dry Heat, which is altogether unnatural to Plants; they may bear an equal Degree in their native Climate, because there they have full Ground for the Roots to spread themselves, but with us they have the Disadvantage of

being circumscribed within the very narrow Limits of a Pot; and the extreme Fibres soon dry. The Substance of the Pot quickly acquires too much Heat, and the Mould becomes dry and parched about the Bottom and Sides where the tender Fibres run. On the contrary, when the Bark Stove is used, the Pots are constantly kept in it; and as there never fails to be Moisture there, the Sides of the Pots will not be dry,

Sept. dry, and consequently the Mould will not be parched in them. There will be the same Degree of Heat preserved, and the Roots will by this Means be kept in a State of growing: these are the Reasons for preferring the Bark Stove to the other, and it is to be constructed in the following Manner.

The Dimensions are liable to no Rule, for they can only be determined by the Pleasure of the Proprietor, and the Number of Plants he intends to raise, but the Proportion is still within the Compass of Rule, and the several Parts may always be ascertained in their Measures.

We shall upon this Plan give the Dimensions of a large one, nothing being easier than to reduce the Measures for a smaller.

First, Let a Part of the Ground be chose for this Purpose that is perfectly dry; and let it stand open to the South Sun, and defended as the Greenhouse from the cold Quarters.

On this Spot mark out the Form of the Stove intended to be divided into several Parts by cross Partitions, or to be kept in one large and spacious Area.

Let the Length be eight and forty Foot, and the Breadth eighteen. Let the Foundation of the Walls be laid, and those in Front be carried up one Foot above the Surface.

Let the Area within be then marked out, and divided in half (or into more Parts) a Partition of Glass is to be run across at this Line of Division; and two Pits of Bark are to be dug, one in each Division; there are also to be two Furnaces, one of which will serve for each, and by this Means the Heat may be made different in the two Parts, and those Plants which require most may be placed in one, and those which require somewhat less in the other.

The Height of the Stove is to be proportioned to the Kinds of Plants, and their full Growth; in one of this Extent it may very well be twenty Foot: In this Case the Back Wall should be fifteen Inches thick; and when it is carried up to the due Height, the Wood-work may be laid upon the Foot Wall in Front. This must be the Place for the receiving the Frames of the Glass-work, and from this are to rise the Uprights which separate the Frames one from another, and support the Front of the Building. This, excepting for these Uprights, which are to be of sound Timber, must be entirely of Glass.

The whole of the Wood-work must be made very firm; and the Sashes in Front should be ten Foot four Inches in Height.

From the Top of the Back Walls there must come a sloping Roof, which must be terminated by a Frame of good Timber, to receive the Tops of the Glasses which are to be raised on those in Front.

The Front Sashes are to stand perfectly upright; and from their upper Part two Ranges of Glasses are to be carried slanting to the Frame-Piece which terminates the Roof. This

is the Form of the Building; and in these Proportions it will allow ample Room for the Pits of Bark, and Space to walk round them; with Height for the tallest Plants.

Every Thing must be made very tight and firm. The Roof must be slated, the Timber-work solid and sound; and the Framing of the Sashes must be performed in a Workman-like Manner, for they are to move easily, and yet shut firm.

The two Areas, divided by the Glass Partition, are now to be wrought for the Pits.

There must be a Walk left in Front, and another behind; and there must be Space also allowed for erecting the Flues in this Part. This gives the Measure of the two Pits, which being thus marked upon the Surface are to be dug out three Foot in Depth; and in the Measure being thus allotted by the Building, the Earth being clear'd away, they must be bricked at the Bottom, and wall'd up all round.

This being ready for the Tan, the Flues are to be considered; we treat of them distinctly, that the practical Gardener may understand every separate Part; but in the Construction of the Work they are to be carried up with the Back Wall; the Foundation of which is to be made broad enough for both; for being built at once, they will settle together: and the Flues are so nice an Article, that any Disorder in them will destroy the whole.

These are to rise from the two Fire-places we allow to a Stove of this Extent; and those Fire-places are to be placed one at each End of the Building, with Sheds erected over them for the Convenience of managing the Fire.

The Flues, which take their Rise from these, are to be carried about six Lengths, one at a small Distance over the other: they are to run along the Wall, and to come each Way within four Inches of the Glass Partition; but they must not be united one with the other, for that would prevent the Draught.

The lowest Flue should be eight and twenty Inches in the Clear, and all the others nineteen Inches. This will raise the whole Body of them about eleven Foot from the Level of the Floor, and that will give good Passage to the Smoke, and very well warm the Air of the whole Division.

The Gardener will find no Difficulty in entering into these Proportions, or in reducing them to proper Dimensions for the erecting a Stove for any smaller Number of Plants; and he has thus the whole before him.

The mechanical Part is better understood by the Carpenter and Bricklayer, than it can be explained in Words; but his Business is to see that the whole and the several Parts answer the Intent and Purpose: that the Framework of Wood is all secure and close, that the Sashes fit, and that the Flues draw well. Another Article will also require his strict Attention; which is, that the Smoke do not get into the House through any Defect in the Work: this is the nicest Article in the Bricklayer's Work.

There

Sept.

There must be but a small Thickness of Wall within Side the Flues, that the Heat may easily get into the Room; but this must be very well wrought, for as the Smoak has so many Returns and so crooked a Passage, it will be very ready to burst through the Wall where it is so thin; and this would be more mischievous to the Plants than any other Accident. For the rest, the same Rules are to be observed in finishing, that we directed under the Article of the Green-house.

The Back Wall and the small Roof, as also the two Ends and the Stack of Flues, should be covered with Stucco, and painted white. This small Roof, which extends only over the Flues and the Back Walk, strengthens the Building,

gives good Place for the Frame-work, and saves so much Glass where it would be of no Service; and this white Colour will be reflected back upon the Plants to their great Advantage; and when the Stove is shut up, as it must be in Winter during very bad Weather, it makes a very little Light answer the Purpose.

From the back of the Roof should be hung a Covering of coarse Cloth, which will roll up or be let down by Pullies; and the same from the Frame of the Front Glasses. Both these may be kept drawn entirely up in good Weather; but in bad they may be let to fall down over the sloping Top and Front, to keep off too violent Storms of Hail, and Rain; and the worst Frosts.

Sept.



C H A P. III.

Of G L A S S E D B E D S.

AT the two Ends of the Stove it will be very proper to erect two Beds for the raising Exotics from Seed, and the giving other Plants of the tenderer Kinds so much of their first Growth, as will make them fit for the Stove. These may be of a middle Kind between the absolute Bark-bed and the Stove; or there may be small Stoves which the same Fire may heat.

They may have small upright Glasses in Front, or the sloping Glasses at the Top may be brought down to the Foot-Wall: all this is at the Pleasure of the Proprietor.

Their Height should be such as to form a regular Part of the entire Building; and the Heat they will require from the Fire of the Stove will be very little, because being small and close, with the Help of the Fermentation of the Tan, they have a warm Air without any farther Assistance; or, as in this Design the Fire-places are situated near the two Ends of the Stove, it is easy to give this additional Heat.

The best Method is by carrying a Flue from the Fire-place of the Stove under the Floor; but this must be so made that it can in general be kept clos'd, and only opened

when there is Occasion.

In the Place of these some build Glass-cases for those Plants which require Shelter, during our Winter, but no additional Heat; and this is also a very natural and proper Appendage in regard to the Uniformity of the Building; though the Stove is of very little Use in this Case to the Plants.

As we have severer Winters than ordinary some Years, and as these Buildings will be thus very near the Fireplaces of the Stove on each Hand; it will be proper to make a Flue also under the Floor of each of these, to communicate with the Fireplace, but to be kept stop'd at all Times, unless when the Severity of the Weather renders it necessary to open it, to give some Check to the extraordinary Violence of the Frost.

These Buildings should be made with upright Fronts, and sloping Roofs of Glass, with a small solid Roof behind, just as the Stoves are built, and they must in the same Manner have Cloths to let down upon them by Way of Defence in severe Weather; for Glass is but a poor Shelter in hard Winters.



C H A P. IV.

Cautions in the building of S T O V E S.

THough we think lightly of those who affect to tell in what Manner the Bricklayer is to execute his Business, which his meanest Labourer understands better than the best of these Directors; yet there are Cautions in so nice a Work, of which he must not take it amiss

No. 54.

that we remind him.

In the first Place. As every thing will be kept continually dry in the Stove, there must be great Care to prevent the Occasions of Fire: and no Part of the Wood-work must be brought any where near the Fire-place.

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Sept. The next Caution concerns the Bark-beds: the Dimensions and Place of these we have given, and at one End they will each of them come towards the Fire-place: a great deal of Danger is to be apprehended from this, and no Care is too much to prevent it: if the Fire have too much Power upon the Bark, it will at once prevent all its good Effects, which are the Moisture and the Fermentation: the Bark-Stove will thus be brought into the Condition of a dry one: and all the Advantages of its particular Structure lost. But it will probably soon be worse than this: the Bark, when thoroughly dry, may take Fire; and every thing be destroyed at once.

The Gardener understands that between the Brick-work of the Fire-place, and the Wall of the Pit, there is a Space answerable to the Walk behind, it may be dug out and left entirely hollow; turning an Arch over it for the Support of that Walk. This is the most secure Method; for the Heat will continue itself in a surprizing Manner through solid Substances.

The Glasses in Front being moveable, may serve very well for the Entrance, at such Times as it may be proper to open them; but in cold Seasons they must be kept shut; and there must be an Entrance into the Stove made in such Manner, that the Gardener can go in without admitting much cold Air after him: for this Purpose the Entrance must either be thro' some sheltered Place, or very well defended by a double Door; but the first Way of coming into the Stove from another Room, and not immediately out of the open Air, is vastly preferable.

If there be those Glass Buildings at each End which we have just described, the Way

Sept. will be through them; and as the Air in those Buildings is always much warmer than without; there will need no more than the common Form of a Door to the Stove.

If there be not this Convenience, it will be best to open two Doors into the Stove, one from each of the Sheds where the Fireplaces are. As the Flues run on one Side, the Door should be made on the other; and the Air being always warm in these Sheds by the Fire, there will be no Danger of chilling the Plants.

With respect to the Fuel that should be used, the most familiar, natural, and ready, is common Sea-coal. And the smaller Kind should be chosen, because that will make the most uniform Heat.

In *Holland* they use Turf, because it is the common Produce of the Country; and in *France* they have chosen Wood for the same Reason: let the Gardener take Care that what is the Effect of Necessity in these Places he does not follow here from Choice. With us Coal is not only the readiest at Hand, but the easiest managed, and it has the Advantage of making less Soot than either of the other Kinds; and of heating the Air more uniformly.

The two or three lower Flues only, in Places where Wood or Turf are burnt, have any considerable Heat, and the Air is therefore warmed irregularly: but in the Use of Coal, these Flues being carried up so high, the Air is warmed regularly all the Way up them, and consequently all up the House.

The principal Quantity of Smoke that is made by this Fuel, lodges its Soot in the first Flue; and we have directed that to be made so wide, that it is easily cleaned.



CHAP. V.

Of the filling the PITS.

AFTER the Description we have given of the several Parts of the Bark Stove, the Gardener will perfectly well understand its Nature.

He knows that the Pits were opened for Tanner's Bark; which, in such a Body as they are capable of containing, will ferment, and retain a useful Heat and Moisture a long Time.

The Pots, containing the Plants, are to be set in this up to the Rim; and some, which will better bear a dry Heat, on the level Top of the Flues.

We have explained the Nature and Benefit of Tanner's Bark in a preceding Part of this Work, and the Reader will therefore in fewer Words understand the present Use of it.

Let a Quantity of Bark, after the Tanners have used it, be procured for this Purpose. Let it be of a middling Size or rather inclining to large; and, with every Load of it mix a Bushel of Elm Sawdust. Throw the whole Quantity up into a Heap, and let it lie thus for the Water to run off, and for the Beginning of the Fermentation.

When it has lain a Week, let it be thrown into the two Pits by a little at a Time, and spread with Care: this Motion, which will for the present check the Fermentation, will bring on, soon after, another, and this will come on gradually; and the Quantity being great in each Pit, it will last a great while. Six Months the Heat of this first laid Quantity will very well continue; and when

at

Sept. at that Time it is found exhausted in some degree, it is easily refresh'd by the Addition of a little new Tan.

The Method of laying it in, is to spread every Parcel with a three-prong'd Fork; and when the Lumps are thus separated, to flat it down a little with the Back of the Fork. It must not be pressed, nor must it be too loose, for in either Case it will not heat well; and I have found it very serviceable for the Continuance of the Fermentation, to sprinkle in a small Quantity of fresh Elm Sawdust upon every Parcel of the Bark.

The Gardener will observe that we prefer Elm Dust: but any of the common Trees of our own Growth afford a proper Kind: the Exception lies against Dust of Fir, or other resinous Trees, which is of a contrary Quality. The Elm Sawdust is best because of its loose Texture, but Beech or Ash will do.

If the Tan have been used a Fortnight, that is, if it were a Fortnight out of the Tan-pit, which is a very good Age, before it was thrown up into the Heap, and have lain a Week in the

Sept. Heap, about sixteen Days more will bring it to a due Temper in the Pit, and the Plants may be then brought in.

The Building should be in a Condition for the Plants before the Tan is put into the Pits, that no Part of its Fermentation may be wasted; and every Thing being in this Order, the Plants of the hottest Climates will flourish in the Stove as if in their native Country. All they want is sufficient Air, and Scope of Ground; but with regard to Air, a great deal may be admitted in the Summer Months, by opening the Glasses or the Doors; and it happens fortunately enough for the Curious, that very many of the Stove Plants do not require a great deal of Mould.

The rest is all as in their natural Country; their Roots are surrounded with a warm moist Mould, which the slow Fermentation of the Tan always preserves in that due Temper with the common Management of Waterings; and the whole Air of the Room is kept in a proportioned Temper of Heat by the Flues in the back Wall.

C H A P. VI.

Of placing the P L A N T S.

OUR Stove of this Construction has two Divisions, or consists of two or more Rooms. The Extent made two Fire Places necessary, and a cross Division of Glass-work separates the Building, while it conceals no Part of it from the View; and the two Rooms are capable of being kept in two Degrees of Heat throughout all Seasons.

The Trees and Plants are to be separated into two Kinds, according to their Climates and Nature, the tenderest for one of the Divisions, and those which are a little hardier for the other.

These Degrees of Tenderness we have expressed in regard to those described in the preceeding Parts of this Work; and for the others, the Places whence they come will lead the Gardener to make a fair Conjecture; and if he finds he has mistaken in placing one of the most tender among those which require a little less Heat, it is an Error easily amended, by removing it into the other Division.

In each of these Beds, the Pots containing the Plants, and Trees, are to be set up to the Rim in

the Bark, and the Top of the Flues will afford a Ridge on which many of the succulent Plants may be set; and where they will perfectly well thrive. The Melon, Thistle, and the like, will succeed very well in this Place: they are Natives of a barren Sand; dry, and naturally parched; and they do not require that Moisture of the Mould about their Roots, which is essential to the others.

These were the Plants first kept in Stoves, and for these the dry Stove, or that without Bark, answer'd very well; but it was soon found that there were a Multitude of other Plants, very beautiful and very desirable in curious Collections, which could not be preserved without Moisture about the Roots, as well as Warmth of Air; for these the Bark-beds were invented, which have succeeded so happily, that there is scarce any Vegetable at this Time but may be raised in them; nor can there ever be Occasion to make a dry Stove now, because there will be always Room enough in these for those Kinds to stand dry, which will bear that Method.

C H A P. VII.

Of managing the H E A T.

THE plain Intent of the Stove is to give, and to keep up an increased Warmth in the Air; and on this depends entirely the Success of the whole: but the Degree to be thus

preserved, would be very difficultly known, and more difficultly kept regular, but for that excellent Machine, the Thermometer.

By this the Gardener is to give his first Heat, and

Sept. and on this he is to depend perfectly and entirely for the preserving it in the same State. For this Purpose let him procure two perfectly good Thermometers, and let him take Care that they are continually in right Order.

Let them be placed one in each Division of the Stove; and at a Distance from the Fire-place, for they are to shew the general Temper of the Air in the Room, and they must not be within the Reach of the Fire to be any other way affected.

The Contrivance of these Machines is now reduced to such Exactness and Certainty, that nothing is left to the Judgment of the Gardener; but he is to do every Thing by Observation: the Degrees are marked; and all he is to observe is, that he by no means let it rise or fall much below the true Place.

A little warmer in the one Division of the Stove, and a little lower in the other, will be proper for the suiting the Condition of the Air to the different Degrees of Tenderness in the Plants; and it is not to be expected, that this can be exactly kept to the Mark at all Times.

It would discourage the Gardener from doing his Duty, to tell him so much more than could be perform'd, was expected of him. All that he needs to do is this: let him observe by the Thermometer, what is the exact and proper Degree of Heat for each Division; and let him

Sept. often visit the Stove to see that it keeps near it. There is no Possibility of keeping it always exactly at that Point; nor will there be any Damage to the Plants in its being sometimes two or three Degrees below, or sometimes two or three Degrees above it.

This gives the Gardener a Latitude of six Degrees: within this there will be no Danger, but within it he must absolutely keep. If he go often into the Stove, he will be in no Danger of keeping it within this fair Compass; but Neglect of visiting the Place may run him into the most destructive Errors.

It is equally dangerous to the Plants, to be kept in an Air a great deal too warm, or a great deal too cold: but the Change is so easily made, as the Heat depends upon actual Fire, that there is no Danger of losing any of them this Way, except by the absolute Neglect of looking in at different Times in the Day.

The Aspect of the Plants will shew presently whether the Air have, or have not been kept in tolerable Temper; for they can never be in good Condition, or appear lively, unless the Heat be within the six Degrees we have allowed; three under, and three over the exact Mark: with this they flourish as in the native Climate, under that due Regulation which we have laid down for the general Management, and for the several Kinds in the Course of this Work.



C H A P. VIII.

Of refreshing the B E D S.

WE have directed the Gardener to put his Plants in a perfectly right Condition; and we have told him that the Bark-bed thus prepared, will retain its Heat so considerable a Time as six Months.

It will then require to be renewed; but he is not to understand that we mean by this it will require to have the whole Quantity of Bark taken out, and new put in its Place.

The Effect of the Fermentation is to moulder and crumble the Pieces of Bark, and this done, the Heat ceases. The Fermentation effects this much more speedily, when the Air joins also its Influence on the Surface of the Bed.

For this Reason a Bed of Bark always appears exhausted before it really is; and more exhausted than it is.

Therefore let the Gardener know what he will need, and provide no more: let him procure a fresh Quantity of Bark equal to about one-fourth of the original Quantity.

When this is ready, let him take out the Pots, and pare off as much of the Bark at the Surface, as the new Quantity will supply: this being removed, let him throw in the fresh Bark; and with a three-prong'd Fork dig up and turn the whole, new and old together.

When it is well mix'd, let the Surface be

levelled, and the Pots then set in as at first. The sooner this is accomplish'd the better.

The Fermentation which was not exhausted in the lower Part of the Tan in the Bed, will be set a-going a-fresh by the Addition of the new, and every Thing will be reinstated as in the original Construction of the Stove.

As the Period of six Months is the natural Time that the Beds keep their due Temper, the best Method is to fix upon certain Times of the Year for refreshing them; and the two most proper are, the Beginning of *April*, and the Beginning of *October*.

These should be the fix'd Times for the great Operation of refreshing the Beds; and for the rest of the Year the Management of the Plants is comprised in a small Compass of Direction. Cleanliness is a great Article; and the next are the due Admission of Air, and Refreshment by Water: all dead Leaves, and decay'd Parts of Plants must be taken off, and thrown out of the Stove as soon as perceived; and this, with the due Regulation of the Heat, by defending the Plants by covering the Glasses in Winter, and the letting in Air with Moderation, when the Season permits, will keep the whole in perfect Health and Vigour.

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A

COMPLEAT BODY of GARDENING.

N U M B E R LV.

For the first Week in OCTOBER.

S E C T I O N I.

FLORA, or the PLEASURE-GARDEN.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. DOUBLE CHINA ASTER.

Octob.

Pl. 55.
Fig. 1.

THE Garden scarce affords a more elegant Flower than the *China Aster*, when double, and well colour'd: and there is great Advantage in that it bears the open Air; and common Ground. The Quantity of Flowers, and their Bigness, upon so small a Plant, are Articles of great Account; and we scarce know any Kind in which there is such a Variety of Colouring. The old Writers were not acquainted with the Plant. But of later Time all have named it, and all with great Praise.

The Character of the *Aster* Tribe is so strongly impressed upon it, that none have mistaken its proper generical Name. DILLENIIUS calls it, *Aster Chenopodii folio annuus flore ingenti specioso*: annual Oracle-leaved Aster, with a large elegant Flower.

LINNÆUS, more correct in his specifick Distinctions, is under a Necessity of a longer Name for this, as the Species of the *Aster* Family are very numerous: he calls it *Aster foliis ovatis, angulatis, dentatis, petiolatis, calycibus, terminalibus patentibus foliosis*: Aster with oval, angulated, and dentated Leaves, on Footstalks; and with broad leafy Cups terminating the Stalks and Branches.

The Root is composed of numerous Fibres
Numb. LV.

connected to a small Head; they are long, white, and spreading; and in proportion as they have Room to extend themselves, the Plant flourishes.

The Stalk is round, and ridged; of a purplish Colour, very much branched, and two Foot high.

The Leaves toward the lower Part are oval, angulated a little, variously indented, placed on Footstalks, and of a deep blackish green.

Those on the upper Part of the Stalks are narrower, and have no Footstalks; they have several deep Notches on the Sides; their Colour is a somewhat paler green, and their Surface rough. Those at the Extremities of the Branches, and just under the Flowers, are narrower yet, and paler; they are waved a little at the Edges, but they have no Indentings.

The Flowers terminate all the Branches, and there are several others on short Footstalks, which rise from the Bosoms of the upper Leaves.

In the single and natural State of the Plant they are extremely large and elegant; consisting of a Series of violet colour'd Rays, surrounding a golden Disk; but in that improved Condition to which the Plant is brought by modern Culture,

Octob.

Octob. the Variety and Lustre of the Flowers is beyond almost Imagination.

The Rays instead of enriching a large Disk in a single Series, are numerous, and disposed one Range within another with a most pleasing Irregularity: in Colour they are either violet, blue, crimson, or white; or of any of the Tincts which Painting can produce from a Mixture of those three.

In either of these Colours, the Plant cover'd with a Multitude of Flowers on all its spreading Branches, affords a most pleasing Appearance; and a Number of them placed at moderate Distance, with other autumnal Flowers between, gives a Grace, that scarce any thing equals, to this advanced Season.

'Tis in this State the Gardener admires the Plant, and to bring it to this he employs all his Labour: but to the Botanist there is more Information in the single Flower; and to that we must refer him for the Characters of the Plant, which are as strongly expressed in it as any of the *Asters*.

The Cup is form'd of several Ranges of leafy Scales.

The Flower is composed of a Multitude of tubular Floscules, rang'd close together in a Disk, with a Circle of surrounding Rays.

The tubular Floscules in the Disk have the Rim cut into five Segments, and expanded; and in these there are five short Filaments, with long Buttons, which coalesce into a Cylinder. In the Centre of them stands a single slender Style split at the Top. This rises from an oblong Rudiment, crown'd with a little Rim, which was the Cup of the particular Floscule.

The Rays are long, and broadest in the Middle, and they have three Indentings at the End. These have at their Base a Rudiment of a Seed, and from it a long slender Style with two Heads; but there are no Filaments or Buttons. These are therefore Female Floscules; the tubular ones in the Disk Hermaphrodite: both these and the others are succeeded by perfect Seeds.

The five coalescent Buttons shew the Plant to be one of the *Syngenesia*; and as the Floscules of the Disk ripen their own Seeds, the Impregnation which the Rudiments placed under the Rays receive from their Buttons, is judged unnecessary, and the Plant is to be refer'd to that Order under the *Syngenesious* Class, which he distinguishes by the Term *Polygamia superflua*.

When the Floscules in the Disk of a composite Flower do not ripen their own Seeds, but the Rudiments under the Rays, which have no Male Parts belonging to themselves, are impregnated by their Antheræ, in that Case the various Impregnation is judged necessary, as it is here superfluous.

Culture of the CHINA ASTER.

It is a Native of *China*, and is in that gay Country as frequent about the Hedges as Mal-

lows, or Thistles, are with us. It loves a free, open, and mellow Soil, and thrives best where it has full Exposure.

With us, though it bear the open Ground and free Air in all Seasons during its Growth there, yet there requires the Assistance of a Hot-bed to bring the Plants forward at first; and some Cautions, more than the common Gardener uses in the Management of it are necessary afterwards: for which Reason it is rarely seen in the full Perfection.

As it is one of the most elegant and valuable of the annual Plants, we shall lay down at large the Management of it from Seed to flowering; and this may be the more agreeable to the young Gardener, as the same Rule will hold for the other Annuals raised on Hot-beds.

He who would have the *China Aster* in Perfection, must begin his Care the present Autumn. Let him mark a certain Number of his finest Plants for Seed, and pull up all that are of an inferior Kind as they open their first Flowers. The Farina from one of these Plants will impregnate the Flowers of another; therefore if there be but one indifferent Flower left in the same Ground, there is no Certainty of the Seed being fine.

When the Plants are placed in the same Border, the Winds will bring the Farina of one upon another, and that Way affect this Mischief.

When they are too far off for that Accident to have place, the Bees that take Honey from one Flower, and then from another, will do the same Mischief.

These Insects collect Wax as well as Honey; and the Substance of this Wax is the Farina, or Dust of the Buttons of Flowers: they fix this upon their Thighs; and they visit many Flowers, in order to get the Loading they carry in at once. They may come from a bad Flower to a good one, and the Dust they bring from the inferior Kind will do the same Mischief.

There is not this Danger in the Bees coming from one Flower to another, when they are of different Species; for Nature has adopted the small Organs of Flowers to the Reception of their own Dust, and no other; and the Seeds are not capable of Impregnation by any other, unless in very particular Instances, whence the few mongrel Plants; but in the Varieties of Flowers raised by Culture from the same Seed, the Organs are the same in all, and the Farina or Dust is the same; and therefore the Mischief will be very likely to happen, and the finest Flowers will be debased.

This is the Course of Nature in the Impregnation of Plants: to this it happens that there are not continual mixed Breeds produced; and to this is owing the Danger of debasing the best Flowers, by leaving bad ones among those which stand for Seed.

The Caution holds equally in many other Kinds; but in all the composite Flowers it is to be regarded with a particular Attention, because we

Octob. we see Nature has intended this various kind of Impregnation.

The Rudiments of Seeds in the Verge, are to be impregnated by the Dust of the tubular Floscules in the Disk; and they will as readily receive that Dust from the Floscules of another Plant, of the same Species, as from those of the same.

The Gardener will now perfectly understand the Reason of tearing up all poor Flowers among the good ones he leaves for Seed; and he will thus be secure of a good Kind.

There is a Way of improving his Stock yet farther. We know a Property in Nature, of which we cannot explain the Reason: it is that Seeds of the same Kind of Plant grow better upon a remote Ground, than in that whereon they were produced. The Farmers know it in regard to their Wheat; and dealing upon good Faith with one another, they make Exchanges for that Reason.

It will be wise in the Gardener to do the same in this Instance: if he knows another who will take the same Care in saving Seed from his Plants, there will be Advantage to both in changing.

The Management of the Seed Plants must be the same we have directed on other Occasions: they must not be suffered to exhaust themselves by too much flowering; but after a good number of Flowers are set for Seed, all that offer afterwards must be taken off in the Bud. The whole Effort of Nature will that way be directed to the filling of the Seeds; and this the Gardener is to promote farther, by clearing away the Bed to some Distance about them, and giving them frequent moderate Waterings.

These are to be continued all the Time the Seed is taking its Growth; but when it has acquired the full Bigness, the whole must be left to Nature; as nothing is required but a gradual hardening of the Seed.

When the Seed is ripe and harden'd, let the Heads be cut off carefully, and spread upon a Shelf, cover'd with Paper, in an airy Room. Let them lie at a good Distance from one another; and let them be turned at least once a Day.

When they have lain thus a Fortnight pick out the Seeds, and spread them also upon a Shelf to dry and harden farther. Turn them often; let them lie a Week, and then tie them up in Paper Bags: they are in a Condition for keeping, till the Season of sowing; and in this State the Change should be made between one Gardener and another, each being sure the other has taken the same regular Method of managing them. In these Bags they are to be kept till Spring.

In the Middle of *March* let a Hot-bed be prepared for them; and covering it five Inches with fine Mould, when it is of a due Temper, the Heat gentle, and the Mould warmed through, let these Seeds be scatter'd on with an even Hand, and a Quarter of an Inch of the same

Mould be sifted over them.

Octob.

When the young Plants appear, let them be thin'd where they rise too close; and from this Time let the Glasses of the Bed be raised more and more every Day, that the Plants may be habituated to the Air.

The common Error is the keeping them too close in this first Bed, and then removing them to another of the same Kind. Let the Gardener avoid this Mistake.

They are to be planted out from this Bed into the open Ground, though it must be in a well chosen Spot, and their Success depends upon the hardening them in the very first Period of their Growth.

If they are drawn up weak, tall, and tender at this Time, they will be check'd greatly upon removing into the Air, and Insects will seize on them; they never will have their full Bigness, nor their true Shape.

There is not a handsomer Plant than a full grown *China Aster*, cover'd with Flowers; but we see for one such a Thousand distorted Dwarfs, all owing to Mismanagement, and this is the first Article of it in most Gardens.

Let a Piece of Ground be chosen in the Seminary that is well shelter'd from cold Winds, and open to the Morning Sun.

Let a Bed be well dug up in this a full Spade deep, and the Mould perfectly broke.

When the Plants on the Hot-bed are three Inches high, let this Bed be mark'd out into Squares of ten Inches Bigness; and in the Evening of a cloudy Day, let the Plants be taken up, each with a good Ball of Mould; and Holes being ready open'd for their Reception in this new Bed, let them be planted one in the Centre of each Square.

Let the Mould be carefully gathered about them; and let them have a moderate Watering. Shelter them with a Reed-hedge to defend them from the Wind and Sun till rooted; and promote this by frequent moderate Waterings.

Every Evening let these be repeated, unless natural Showers do the Business for the Gardener; and let him proportion the Quantity of watering to the Condition of the Mould; it must never be made wet or pappy, nor ever suffer'd to be very dry.

Once in four Days let the Ground be broke by a Hoe; and if any Plant among them appear blighted, let the injured Part be cut off; and Nature left to her Chance for renewing it. 'Tis better to cut down a Plant on this Occasion, within one Joint of the Ground, than to suffer it to continue in that diseased State; there will a better Plant rise from the Bottom than could have been made from the whole.

Six Weeks the Plants should remain in this Bed; and after that they will be fit for removing to the Places where they are to flower.

Some keep them longer out of the Garden, but it is wrong, for they bear removing worse; and the Flower Buds being form'd, the Beauty of

Octob. of the Plant is often spoiled by the Check they receive at that Time.

'Tis best to have one large Bed for these Plants, not to disperse them in the Borders. The inferior Kinds may be placed in that Manner; but the fine ones should be preserved separate, and there cannot well be conceived a nobler Appearance than a large Bed of double *Asters* of this Kind, intermixed at Nature's Pleasure, in their various Colours, and glowing with all the Degrees of purple and crimson down to white.

It must be left to Nature to mix these Colours; for, according to our Rule of removing at this Period for the last Time, there is no knowing what they will be.

Therefore when the Plants have had six Weeks Growth in their second Bed, let a fine warm Spot be chosen for them in the Garden, and a Bed dug up two Spade deep, the Mould fine and fresh.

At the same Time also, let some Holes be open'd in different Parts of the common Borders. Let the Bed be mark'd with Lines length-way and across, at a Yard Distance, and in the Centre of each open a large Hole.

In a cloudy Evening take up the Plants out of the Nursery Bed, each with a good Ball of Earth.

Such, as in spite of all Care have been damag'd, are to be planted in the Borders; the fine ones in these Holes, one Plant in each: the Mould must be well closed about them, and they must be here as at first, shaded, and water'd every Evening till they have taken Root.

A showery Season is a great Assistance at the Time of this transplanting; but if Nature withholds this Benefit, the Gardener must supply its Place by frequent Waterings. Though a showery Time is a great Advantage, he must not defer the Work in Expectation of it; for on the making this last Transplantation in good Time, depends the future Success of the Plants.

When they are well rooted in the new Bed, they will require no more Care than to have the Ground between them at all Times kept clear from Weeds, and once in ten Days very well

broke, to the Depth of an Inch or two, with a Octob. Hoe. The Waterings must also be repeated frequently; and all Care taken to keep the Plants in Health.

In this Manner, and in no other, the *China Aster* will be brought to flower in its full Perfection.

The Compass we allow for the Roots, is much more than commonly supposed necessary for that Purpose, but the Plants will thus cover the whole Ground.

When they come to flower there will usually appear one Flower upon the Head of the main Stalk, larger, but less double than the others: this should be taken off as soon as it appears, for being less double it should not stand for Seed; and the Effort of Nature, unless it be taken off, will be most employ'd that Way because it is the first. The taking this off is therefore no Injury to the next Crop, and it greatly increases the Bloom upon the other Parts of the Plant.

In all single flower'd Plants this first Flower should be mark'd, and kept for Seed, for the very Reason we have just given, that the Effort of Nature is immediately directed thither for the ripening it: but in double flower'd Plants in general, this Method should be observed, of pulling it off; and most of all in the *China Aster*.

This is not known: they who have Skill enough not to save Seed from this Flower, yet leave it upon the Plant; not considering that although they do not intend to preserve the Seed of this Flower, Nature will be at the same Pains to ripen it; and that it starves, in some degree, all the others.

The same Care must be taken to crop the Flowers off from all the Plants, except those saved for Seed as they fade; for on that depends the Succession of others; this Method, and good Watering, will keep the Plant in Beauty till the Frost destroy it.

It is but about five and twenty Years we have been acquainted with this Plant; and a much less Time that we have seen it with double Flowers.

2. DOUBLE CRIMSON HOLLYHOCK.

Pl. 55. There wants only Scarcity to place the *Holly-*
Fig. 2. *hock* among the choicest Flowers. The Plant is of exalted Stature, and of regular Growth. The Flowers are large, double, and in the present Kind most elegantly colour'd.

The Eye of just Observation will see its Beauty, however frequent Observation may have dulled those of others; and as it has always from our first Knowledge of the Plant, had, it will always retain a Place in our Plantations.

The old Writers have been well acquainted

with the Plant, and they have refer'd it to the Mallow Kind; distinguishing it by the Epithets *arborea*, from its Stature; and *bortensis* from its Culture; as also by a Variety of other Names from its Form and Colouring in the Flower.

DODONÆUS calls it *malva bortensis*: the Garden Mallow: others, *malva rosea bortensis*: the Garden Rose Mallow; and *malva rosea folio subrotundo*: the roundish leaved Garden Mallow, in Distinction from another Kind which has a Fig-like Leaf, and is called therefore *ficus folio*.

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Octob. LINNÆUS, rejecting these vague Distinctions, has separated the *Hollyhock* from all the mallow Kinds, and shewn in it the Characters of a distinct Genus: to this he gives the Name *Alcea*, a Term before used for the *Vervain-Mallow*, but now appropriated to this Plant; and the others, which constitute the Genus. He adds, as the specifick Distinction of this, *Folii sinuato-angulosis*: *Alcea* with deeply-sinuated, and, as it were, angulated Leaves.

The Root is long, thick, and white; and it is hung from all Parts with innumerable Fibres, which spread to a great Distance when they have Room and a free Soil; and then only shew the Plant in its highest Perfection.

The first Leaves are very large, and placed on long Footstalks; they are broad, short, deeply sinuated, rough, and of an obscure green.

The Stalk is round, erect, of a pale green, a little hairy, and seven or eight Foot high.

The Leaves on this have also long Footstalks; they have a general Resemblance of those from the Root; but they are longer in Proportion to their Breadth, of a paler Colour, and more deeply sinuated or waved at the Edges, and are lightly indented between the deeper Incisions.

The Flowers form a Spike from a little above the middle of the Plant to the Summit; a Yard or more in Length: they stand thick, and in the various Appearances of half-blown, full-open'd Flowers, and those in the Bud they afford a pleasing Variety.

The full-blown Flowers are equal to a Rose in Bigness; and are of a delicate pale crimson.

The outer Petals, which are large and elegantly expanded, are palest; the smaller, which form a globular Body in the middle, are more waved, and of a deeper red: the whole very specious and elegant.

This is the State of the Plant in the Condition wherein we represent it in the annexed Figure; but there is among the Flowers an almost endless Variety in the Colouring, and the Quantity of Petals or Degree of Doubleness.

In respect of Colour there are double *Hollyhocks* of every Tint, of red from purple, in a Degree that is almost black, to the palest fleshy Hue: white is also a common Colour, and there are yellow in all the Degrees, and some variegated Flowers; but in the whole Compass of the colouring, there is no Tinct in which the large and fine double *Hollyhock* appears so truly elegant, as the pale crimson here represented; nor is there any Colour which is so scarce as this in the full Degree of Perfection.

The Characters the Student must seek in a single Flower; they are obliterated, or at least impaired in these double ones; the more as they are more double: but in the single Kinds the Bigness of the Flower renders all the Parts distinct; and there is no Species in which those of the Class to which all the Mallow Kind belong, can be better traced.

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Every Flower has two Cups distinguished according to their Places, by the Names *outer* and *inner*: both are permanent; remaining with the Seed.

The outer Cup is formed of one Piece, and divided lightly at the Edge into six Segments, which stand expanded. This is the smaller of the two: the inner is in the same Manner formed of one Piece, but it is cut only into five Segments.

The Flower is formed of five large Petals united at their Bases; they are obscurely heart-fashion'd, nip'd at the Edges, and wide expanded.

In the Centre stand a great Number of Filaments, crowned with Buttons of a Kidney-like Shape.

The Filaments unite in their lower Part; and form a pentagonal Column; and at their Tops stand loose: they adhere to the Body of the Flower.

The Rudiment of the Fruit is rounded; and has a short cylindrick Style, terminated by twenty or more, bushy Heads, equal to the Body of the Style in Length. After the Flower the Rudiment ripens into a Fruit of a rounded depressed Form, composed of jointed Capsules; which, when ripe, separate and split on the inner Part. Till that Time they are kept in their Places by a columnar Receptacle, to which they are all fixed by their inner Edge: each Capsule contains one Seed, which is large and Kidney-like, but compressed.

The Student knows, that when the Filaments in any Flower coalesce in whatsoever Manner, he is not to seek its Class and Place in the *Linnean* System by their Number, but by the Condition of that Union. They form in this Flower only one Body, therefore the *Hollyhock* is one of the *Monadelphia*; and the Number of them refer it to the Subdivision of that Class entitled *Polyandria*.

Culture of the HOLLYHOCK.

We have told the Gardener that the black, red, purple, crimson, flesh-colour, white, variegated, and even yellow *Hollyhocks*, where the Leaves answer the Character of those of this Plant, are all Varieties from one common Stock; the same Seeds therefore raise, and the same Culture brings them to Perfection. Indeed the other Kind, which stands separated even by LINNÆUS, under the Name *Fig-leaved Hollyhock*, differs so little from this, that he suspects it but a Variety; and the Change of Leaves in Seedling Plants gives too much Reason for joining in his Opinion.

However that be, it is certain all the others may be raised by good Management from the same Seed, and this is the Method. When the *Hollyhocks* begin to flower, let the Gardener pull up all bad Kinds, that there may be no Damage from the Dust of their Buttons im-

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Octob. pregnating the Seeds of such as are of a superior Kind, and have sufficient Buttons of their own. This done, let the others be encouraged to flower in their full Strength, by breaking the Ground between them, and allowing frequent Watering; and when it is seen which are not promising, let them be marked for Seed.

Let these be tyed up each to a firm Stake; let the Head or Top of the Spike be taken off, that too many Flowers may not weaken the Seeds ripening from the first; and let these Plants have all due Attendance. Let any Side Shoots that offer be taken off, and all the Efforts of Nature directed to the ripening the Seeds.

When these are perfectly ripe, let the Head of the Stalk be cut off, and the Fruit taken off afterwards, and spread upon a paper'd Shelf. Let them be turned every other Day; and when perfectly hardened, let them be put up entire in Paper Bags; not shaking out the Seeds, as is done on many Occasions. Let the Bags be hung up during Winter.

In the last Week of *March* let a Bed of good fresh Mould be dug up in a Part of the Seminary that is open to the Morning Sun. Let it be raked level, and lie a Week to settle; then take off as much of the Surface as will serve to cover the Seeds a Quarter of an Inch: scatter on the Seeds not too thick; sift this small Portion of Mould over them, and leave them to Nature.

When the young Plants come up, Weeds will rise in Plenty among them; and they must be pulled up. The Plants must also be thinned where they stand too close, and after this the whole Bed must have a moderate Watering: Care must be taken to give this gently, not to wash away the Earth from the Root of the young Plants.

After this, as they advance in Growth, they must be thinned from Time to Time; but the Plants taken up are not to be destroyed, but set in a Nursery Bed dug for that Purpose. By this Means the Remainder will gather Strength; and when they are of a Bigness to crowd one another, let the whole be transplanted: at this Time they shoot only Leaves.

The *Hollyhock* is a biennial, and its Stalk for flowering does not rise till the second Season.

When the Leaves are so many and so large, that they crowd upon one another, let a second Bed be dug up in the Nursery two Spades Depth: let the Mould be well broken; and the Bed marked into Squares by

Lines drawn both Ways, at a Foot and a half asunder. Octob.

In the Evening of a showery Day let the Plants be taken up; and, Holes being opened for them in the new Bed, one in the Center of each Square, let them be set with Care, taking them up with as much of the Mould as will come with them, placing the Roots upright in the new Bed, and gathering the Mould well about them: they must be watered often till they have taken Root, and after that kept clear from Weeds: this is all the Management they require during Summer.

In the Beginning of *October* they are to be transplanted into the Places where they are to flower, and this will require also to be done with Care.

Large Holes must be opened for them: they must be dug out deep, and with as much of the Earth as will adhere to them; the Fibres must be trimmed off at their Ends just as they are placed in the Ground; the Mould must be well drawn up about them, and settled by a gentle Watering, which must be repeated more largely the next Day, and every Day afterward till they are well established. They will flower there the succeeding Summer, and they should then be tied up to firm Stakes, and encouraged to blow boldly by frequent Weeding, breaking the Earth about them, and good Waterings.

After this there should be in the same Manner a new Succession raised for the succeeding Year: for the Plants never flower so strong or elegantly as the first Time.

Let not the Gardener suppose we are too particular in these Directions for the Culture of so common a Plant. The Method used by the Generality of his Profession, robs it of the greatest Part of its natural Beauty: the Seed is sown in Drills, because 'tis easy to weed between the Rows; and to save a little Trouble, the Plants are raised close and crowded, so that they starve one another: after this they are transplanted at small Distances, and there left to flower the first Time, that the Gardener may see which are best. By this Means the Plants are never brought into a Garden 'till their best Season is over; and where they stood to flower, they must have been poor because not allowed Room.

The Roots never succeed well when taken up so old; and they are brought into the Garden in this maimed Condition when they should be taken out of it.

3. SPOTTED PHLOX.

Pl. 55. This is one of the many fine Plants we have received from *North-America*. It is there

an elegant Weed; with us it is deservedly raised to the Condition of a Garden Plant. The

Octob. The old Authors could not know it, for it is Native of no other Part of the World but that we have named, which was wholly unknown to them; but it is somewhat strange, that of later Time it did not come more into the Way of those who searched that remote Quarter of the World.

RAY has described it in his Supplement to the History of Plants: he does Honour to Mr. KRIEG, from whom he received it, and who had brought it from *Maryland*: he names it a *Lychnoides*; and those who followed have described several of the other Species of the *Phlox* Kind under the Name *Lychnidea*. RAY adds to this generical Name, *Marilandica Jasmimi flore quinque partito foliis binis oppositis basi & auriculis caulem utrinque amplexantibus*: *Maryland Lychnoides*, with a Flower-like Jasmine divided into five Parts, and with Leaves placed opposite, and embracing the Stalk with their Bases and Appendages.

LINNÆUS, whose strict Ear was equally offended with the unartful Terms *Lychnoides* and *Lychnidea*, has given the Genus the Name *Phlox*, and he adds as the Distinction of this Species, *Foliis cordato-lanceolatis levibus*: *Phlox* with smooth, heart-shaped, and lanceolated Leaves.

The Root is composed of innumerable Fibres connected to a small Head.

The Stalk is upright, firm, simple, and two Foot high, rounded, somewhat rough on the Surface, and elegantly spotted. The two Colours which form the Variegation are red and green; when the Plant is in its highest Perfection, they are thrown together upon the Stalk in irregular Lines, Spots, and Blotches; when it is sickly, or worse managed, they are less elegantly disposed; and sometimes the Colour is simply green, stain'd, as is common in the Stalks of Plants, with a little red at the Bottom.

The Leaves are placed in Pairs, and they throw themselves several Ways with a great deal of Freedom and Irregularity. They are oblong, and moderately broad: largest and Heart-shaped at the Base, where they embrace the Stalk, and from thence waved at the Edges; somewhat broad again near the middle, and sharp-pointed. Their Colour is a fresh green, not dark but pleasing, and they are perfectly smooth.

The Flowers are numerous, large, and beautiful; their Colour is a pale but delicate red, often nearly white, and they are disposed in a great irregular Tuft at the Ends of the Extremities of the Stalks.

Each Flower has its Cup, this is form'd of one Piece marked with ten Ridges, and cut into five Segments at the Rim.

One Petal forms the Flower; but 'tis so deeply cut, that there appear as many as there are of those Divisions.

The tubular Part is longer than the Cup,

Octob. narrowest toward the Base, and a little bent; the Segments of the Verge are five, they are large, rounded, and expanded.

The tubular Part of the Flower must be torn open to shew the Filaments, for they are buried in it; they are five in Number, but irregular. Two are larger, and one is shorter than the other two. Their Buttons stand in the opening of the Segments.

The Style is single, and is of the Form and Length of the Filaments, but it is crowned with a three-parted Head: it rises from a Rudiment of a Conic Form, which ripens into an oval Capsule, marked with three Ridges, formed of three Valves, and divided within into three Cells, in each of which is an oval Seed.

The five Filaments shew the Plant one of the *Pentandria* of LINNÆUS, and the single Style one of the *Monogynia*. The Difference in Length of the several Filaments does not in these irregular Disproportions form any classical Character.

Culture of this PHLOX.

The Plant is a Native of *North-America*, perennial, and fibrous rooted: the Culture therefore is easy. No Care of Defence for Winter needs be had; the common Garden Mould perfectly well supports it, and where it is once planted, it will remain as hardily as an undisturbed Weed.

All the common Gardener does towards its Propagation, is parting the Roots at Autumn, whose abundant Encrease indeed, if nothing more were required than adding to the Number of the Plants, would render all other Care superfluous; but the Pupil knows there is Hope for Improvement, wherever there are conspicuous Flowers: especially when they have a natural Tendency to Variation. The Method of this we shall lay down, and it will serve for the others of the same Kind and Country.

As the Flowers vary greatly in Colour and in Beauty, let the Gardener mark such as are finest, and take Cuttings from those Plants.

Let a Bed of fresh and rich Mould be dug up for these in the Nursery, and let them be watered duly till they have taken Root. The best Season for planting them is the middle of *May*: they will be rooted towards the End of *June*, and they must remain in their Places till *October*; then let them be removed into their Places in the Borders, and let the Ground be kept clear about them for a Foot and a half every Way: this promotes the spreading of their Fibres; and on this depends the Perfection of their Flowers.

The Colouring of the Stalk is very apt to be lost when the Roots are parted; but when Cuttings are used, if Care be taken to chuse a painted Stalk, that particular Beauty is generally preserved in the Plant raised from it; and the Growth is always handsome.

Octob.

Octob.

4. SINGLE VIOLET STOCK JULYFLOWER.

We have in a preceding Number figured the great *crimson Stock*; and have there given the general Culture of the Plant, and the Method of enlarging, doubling, and perfecting its Flowers; as also of keeping them in Perfection; in this and the succeeding Chapter, we shall treat of the common *sweet violet Stock*, and its double, painted Offspring, the common variegated Kind.

The Student has been told, that LINNÆUS rejects all the usual Names of this Genus. This particular Kind which LOBEL, and the less accurate Writers after him, called *viola alba & purpurea*: the white and purple violet, and others after BAUHINE, *Leucoium incano folio hortense*: hoary leaved Garden Stock Julyflower. LINNÆUS ranges, under his Genus *Cheiranthus*; and distinguishes it by adding, *foliis lanceolatis, integerrimis, obtusis, incanis, siliquis apice truncatis, compressis caule suffenticofo*: woody stalked Cheiranthus, with undivided, hoary, lanceolate, obtuse Leaves, and with compressed Pods with abrupt Heads.

'Tis in its plain and simple State we represent it in this Place; as it covers the *Spanish Shores*; and as it stands unaltered in our Gardens.

The Root is composed of innumerable Fibres, long, thick, spreading, and connected to a small Head.

The Stem is woody, upright, two Foot high, of a pale Colour, and wrinkled Surface; and is divided into many Branches.

The Leaves are oblong, and undivided, soft to the Touch, cover'd with a kind of Down, and of a whitish or greyish Colour, with very little green.

The Flowers terminate all the Branches, in great Numbers disposed in long, loose Spikes: they are large, sweet scented, and in Colour of a violet purple: but in this there is great Variation, even in the wild State of the Plant.

We see upon the Shores the Flowers of some Plants of this Kind of the true violet Hue; others

purple, with more red; some pale, and many perfectly white. LOBEL was justified therefore in calling it indeterminately, white and purple. In Gardens the Variation in the single Flower is much more, and when we come to the double ones it is without Limitation.

The Cup of the Flower is form'd of four little Leaves, and is of a compressed Form; two of the Leaves are prominent at the Base, the others plain.

The Flower is composed of four expanded Petals, broad, obtuse, and terminated within the Cup by narrow Bottoms.

The Filaments are six, but four are longer than the other two; this places the Plant among the *Tetradynamia*: and as the Seed-vessel is a Pod, it belongs to that Order which comprehends the *Siliquosæ*.

The Shortness of the two particular Filaments is owing to their being bent within the prominent Part of the two Leaves of the Cup, which have that Particularity; and there is in that Part adhering to each, a Gland, forming the Nectarium of the Flower.

The Buttons which crown the Filaments are singular in their Form, split at the Base, and at the Top pointed and turned back.

Culture of this CHEIRANTHUS.

We have observed, that the Plant is a Native of the Sea Coasts, in the warmer Parts of *Europe*; and we have thence deduced the Method of Culture laid down in a preceding Number: this consists chiefly in chusing a warm well defended Spot, and adding Sea Sand to the Compost; to that Place we refer for the Particulars of the Management; and need only add, that by good Management there will be produced from it the following, and a Multitude of other beautiful Kinds.

5. DOUBLE VARIEGATED STOCK JULYFLOWER.

Pl. 55. The Plant being in its Original the same with Fig. 5. the preceding, no Names of Authors need be brought to shew what it is, nor any Description given at large; the Parts being the same, though render'd more bold and gorgeous by Culture.

From a fibrous Root, as in the former, rises a woody Stem, which at a Foot and half above the Ground, sends out many Branches cover'd with greyish oblong Leaves, and terminated by Spikes of elegant, large, painted, and very fragrant Flowers.

These are composed of numerous Petals, which are oblong, irregular, waved at the Edges, placed in several Series, and stained with different Colours, red, white, and green, in Lines and Blotches.

The Characters are the same as in the single Kind, but the Parts on which they depend are often obliterated, or obscured, as in other double Flowers. The Culture we have given in a preceding Article.

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6. TRILO-



Double China Aster



Double Crimson Hollyhock



Spotted Phlox



single Violet Stock July flower



Double Variegated Stock July flower



Tricotate Lavatera



Giant Lupine

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The Buttons which crown the Filaments are singular in their Form, split at the Base, and at the Top pointed and turned back.

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Double China Aster

Single Violet Stock July flower

Double Variegated Stock July flower

Double Crimson Hollyhock

Trilobate Lavatera

Spotted Phlox

Giant Lupine

J. Hill delin et sculp

6. TRILOBATE LAVATERA.

We have told the Gardener how ill arranged the Mallow Kind stand in the Generality of Authors, and how much Freedom LINNÆUS has been under a Necessity of using to bring them into Order: he is not therefore to wonder at the Name *Lavatera* being bestow'd upon the *Althæa frutex*. The Characters that Author has establish'd are very accurate; and they demand this Sacrifice.

He is to be told that the common Name is as old as *Clusius*. He has called the present Species *Althæa frutex*, without farther Addition; and many followed him. C. BAUHINE arranges it among the *Althææ frutescentes*, and PLUKENET, with many others, after him.

VAN ROYEN and LINNÆUS join in referring it to the *Lavatera*; and the latter adds as its specific Distinction, *caule fruticoso, foliis subcordatis, subtrilobis, rotundatis, crenatis, stipulis cordatis, pedunculis unifloris*: shrubby *Lavatera*, with Leaves of a somewhat hearted and trilobous Form, rounded, and crenated; with heart-shap'd Films at the Base, and with Flowers placed one upon each Footstalk. A long Name, but necessary.

It is a very elegant Shrub. The Roots spread far, and the Shoots are numerous and woody.

The Bark is of a pale brown; and the Branches are paler yet: the young Shoots are green, ting'd sometimes in an irregular Manner with red; and cover'd very lightly with a delicate Hairyness.

The Leaves vary extremely in their Form, sometimes longer, in other Parts of the Plant shorter, but every where shewing a Tendency to a trilobate Division by two deep Indentings, and a long Point from between them.

These several Divisions are more or less conspicuous, and the Leaves are deeper or paler, according to the Part of the Plant on which they grow, and to its Health and Vigour; but they are always irregularly and bluntly indented, and have a light Hairyness; they are also soft and clammy to the Touch.

The Flowers are very numerous, and elegant: they rise from the Bosoms of the Leaves, two or three together in some Places, in others singly, but each of them has always its separate Footstalk. Their Colour varies, but in the most perfect State they are crimson about the Centre, and elsewhere white.

Each has its double Cup, as is common among the malvaceous Kinds. The outer Cup is formed of one Leaf cut into three slight Segments; the inner is larger, formed of one Leaf also, but cut into five Segments; and both remain after the Flower.

The Body of the Flower is formed of firm, broad, expanded Petals, united at their Bases.

In the Centre stands a columnar Body, formed of the lower Parts of numerous Filaments,

Nº 55.

which are inserted in this collected State upon the Flower at their Bases, and at their Tops separate, and are crown'd with Kidney-shaped Buttons.

The Style is single, but it is terminated by several Heads; and it rises from a rounded Rudiment, which ripens into a kind of orbicular Fruit; composed of many small Capsules, in each of which is one Kidney-shaped Seed, and which are kept in their Places by being fixed to a columnar Receptacle.

The Student knows that when the Filaments in a Flower coalesce into a Body, the Class is determin'd by that, and not their Number: he will therefore see this Plant is one of the *Monadelphica*, and the Number of the Filaments refer it to that Subdivision, thence named *Polyandria*.

Culture of this LAVATERA.

It is a Native of *Spain*, and other of the warmer Parts of *Europe*, and thrives best there in a deep rich Soil. With us it bears the Winter in the open Air; but so much Consideration should be had of its naturally warm Climate, as to allow it a shelter'd Place, and as much Defence as can be given Things in the open Ground. Without this Care it lives with us, but this Way it thrives as well as in its native Climate.

Very good Plants of it may be raised from Cuttings, and many have prefer'd that to any other Method, because the Cuttings bear their transplanting without Harm; whereas the Seedlings, after they have acquired any considerable Growth in the Nursery, decay after transplanting. But this is only prefer'd because the Seedlings have not been well manag'd; either way will produce good Plants, but the Method from Seeds the best.

There are several Plants beside this which do not bear Removal when they are grown to any Size; and the Method we have directed for the Management of those will equally suit this; and those who try it will no more prefer Cuttings.

The Seeds ripen with us perfectly in Autumn, and they should be dry'd with Care, and preserved till the following Spring.

In the Middle of *March* let the Ground be dug up two Spades Depth, and the Surface levelled where the Shrubs are intended to stand: if in several Parts of the Garden, let a Spot of half a Yard square be dug up at each Place. Scatter on ten or twelve of the Seeds upon each such Spot, and cover them a Quarter of an Inch with Mould.

When the young Plants appear let them be water'd frequently; and as soon as it is seen which is the finest, and best establish'd in the Ground, let all the rest be taken up, and the Attention of the Gardener be devoted to that.

When only one is thus left in each Place, it
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Octob. must be often water'd; the Ground frequently hoed about it to break the Surface, and destroy Weeds; and it must be train'd up to Shape.

The second Year these Plants will flower; and they will continue with good Management many Seasons in Beauty: the great Care is not to let them flower too profusely. If suffer'd to produce that abundant Quantity of Bloom they naturally will in our rich Garden Ground, and to ripen Seeds after it all, the Plants will be exhausted, and the Roots decay. Nature answers her Purpose by the Quantity of Seeds, which falling, produce more; but those who would preserve the old Plants, must prevent this, by stop-

ping this exuberant ripening of Seeds.

We have observed before, that 'tis not the Production of Flowers, but the ripening of the Seed, which exhausts the Roots of Plants. The Gardener may therefore indulge himself with a large Bloom from this *Lavatera*, if he will be careful to pick off the Flowers when they begin to set. The old Plants may thus be kept alive a great while, but they never flower so perfectly as the third Year.

As they are easily managed by the Method we have given, it will be better to raise some young Stocks, than to depend upon the old ones too long.

Octob.

7. GIANT LUPINE.

Pl. 55. The *Lupines* are a large Assortment of Plants, Fig. 7. specious, and of extremely easy Culture. They are worth a Place in the best Gardens from the Variety they are capable of giving by their singular Form and Colours, and none deserves that Notice more than this; the tallest and most specious of them all.

The Generality of those who have written on Plants have described it; they call it *Lupinus major*, and *Lupinus caeruleus hirsutus*. C. BAUHINE, *Lupinus peregrinus major sive villosus caeruleus major*: the great foreign Lupine, or great blue hairy Lupine.

LINNÆUS, more correct in his specific Names, calls it *Lupinus calycibus, verticillatis appendiculatis, labio superiore inferioreque integris*: Lupine with the Cups placed in Circles round the Stalk, and increased by Appendages, and with the upper and lower Lip of the Flower both undivided. This Name absolutely distinguishes the Species, whereas those form'd on the Colour of the Flower, and other such accidental Marks, are frivolous; for the Colour is changeable, and the same Seeds will produce red, blue, and white; nor are the other Characters of the old Authors better established.

The Root is composed of many thick white Fibres.

The Stalk is firm, upright, branched, of a pale green, and lightly hairy; it rises to a Yard in Height, and is beset with numerous Leaves.

These have long Footstalks, pale, and hairy as the main Stem, and they are of the finger'd Kind: each composed of five, seven, or more Parts, which are join'd to the Footstalk all in one Place; and are oblong, narrow, hairy, and of a faint silvery green.

The Flowers are very elegant, and are disposed to great Advantage; they are placed at Distances upon the Stalk in circular Tufts, and open in Succession.

Each has its Cup form'd of one Leaf, split into two Parts, and hung with a small Appendage.

The Flower is papilionaceous, and regular in that Form.

The Vexillum is rounded and compressed, and has the Edges turn'd back.

The Alæ are oval, and nearly equal to the Vexillum in Length; they converge below, and are not fix'd to the Carina.

The Carina is split at the Base, and falcated upwards; and is narrower than the Alæ, and undivided.

The Filaments are ten; they are form'd into two Bodies in the lower Part, and loose in the upper; they have a bend upwards, and five of them are crown'd with oblong, and the other five with roundish Buttons.

The Style is single, and of the Length of the Filaments, and is crown'd with an obtuse Head.

The Fruit is a large compressed Pod, tough, pointed, and containing in one Cell numerous large Seeds.

The Clafs is found by observing the Coalescence of the Filaments: they are arrang'd into two Bodies, and this is the Character of the *Dia-delphia*.

The Number of the Filaments which is ten, places it under that Order, which comprehends the *Decandria*.

It is a Practice with LINNÆUS, where there is some other classical Character, to make the Number of Filaments the Mark of a subordinate Distinction.

Culture of this GIANT LUPINE.

The Plant is a Native of the warmer Parts of Europe, but it acquires its great Stature and large Flowers by Culture. It is an Annual, and is easily raised: the Seeds put into the common Ground in Spring, bringing it forward, without any more Care than Weeding and Watering: but to raise the Plants in Perfection, they must be allow'd due Distance.

There is also a farther Article to be consider'd, which is the sowing a particular Parcel for Seed. We shall give the Method of doing both.

In the Beginning of March let a warm, dry, and well shelter'd Border be dug up, and plant some good Seeds of this Lupine in Rows a Foot asunder, and at the Distance of four Inches from one another in the Rows.

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Octob.

When the Plants come up, let them be weeded and water'd; and when it is seen which are the strongest and finest, let two out of three be taken up, leaving these stout Plants. They will thus stand at a Foot asunder, and this will be a proper Distance for their flowering. The Earth must be broke about them from time to time, and they must have frequent Waterings.

These will shew all the natural Beauty of the Plant; and the Flowers will be elegant whether in the Bud in their full-blown Perfection, or in the first Approaches to decay; for the Colour often changes in that Time, and the different Flowers upon the same Plant afford a great deal of Variety.

We have observed, that beside these Plants raised for the Summer flowering, it will be proper to bring up a particular Set for Seed: those who are accusom'd to sowing this kind of Lupine, will know the Reason. The Seeds are very subject to miscarry: this is owing to their not

being perfect; and the true Source of the Mischief is, that the Pods did not ripen well upon the original Plant.

This is the Case with most of the *Giant Lupines* sown in Spring; the Season is too cold for their ripening the Seeds, by that Time they have form'd themselves in the Pod.

The Method to have good Seed is to sow the Plants for that Use in Autumn: a very warm Spot must be chosen for this Purpose, perfectly shelter'd from the cold Quarters, and the Soil must be dry.

In this Place, in *August* sow some of these *Lupines*, and if there do not fall natural Showers, encourage the Shooting of the Plants by Watering. They will get so much Strength before Winter, as to bear all the Severity they will be exposed to in such a Spot; and flowering early the next Year, they will ripen their Seeds during the Heat of Summer: these will never fail to produce perfect and fine Plants.

SECTION II.

The Construction of the forcing Frame for ripening of FRUIT.

THIS and the few succeeding Numbers of our Work, will give us Opportunity of entering upon the particular Articles of the Gardener's Profession, as we before explain'd to him all the general Management. After the Stove which produces the Pine-apple in *England*, the forcing Frame for the bringing forward the more common Kind of Fruit demands its Place; and will easily be explain'd to the attentive Gardener.

The Trees must all have the Advantage of a Wall, and their blossoming is to be brought forward by artificial Heat: the most familiar Way is by means of Dung: it requires a large Quantity of that Manure, and the Assistance must be at Times renew'd; but Dung which has lost its Heat, is not deprived of its Virtue. The Dung which has been used for these will answer other Purposes, and the real Expence is less than imagined.

As the Dung is to be laid behind, there must be a Glass-work in front of the Wall, and on the due Management of these depends the whole Business.

In order to set out right, the Gardener should know that three Years are required to re-establish those Trees in Strength which have been forced by these Means; therefore whatever be the Quantity he intends to force each Year, four Times so many Trees, and the due Extent of Wall for them, is to be allowed for the whole.

On this Principle let him begin the Work; he must chuse a Part of the Ground which has the full South Sun, and is well defended from all the cold Quarters. Here let him build a Wall eleven Foot in Height, and cover the South Surface with

good Plaister laid on smooth, and white wash'd.

This is a Method the Gardener does not know, but the Reasons of it may be seen in what we have said of Stoves, and Experience shews its great Utility; four Feet and a half from the Bottom of the Wall let there be drawn a Line as a Mark of the Border. Let this be well dug up, and if not naturally a good Soil, let it be improved as we have directed on a former Occasion.

Let a Ledge of firm Oak Board be laid along the Line, or outer Edge of the Border; and let it be so thick as to admit a Groove, in which the Wood-work of the Frame of some Glass Lights may move.

Let as many of these Glass Lights be made as will cover one fourth Part of the Wall; that being the Quantity to be used at once: and let these be very well framed.

The Breadth of each may be at the Pleasure of the Gardener, for Convenience of moving, but their Height must be such as will reach from the Ledge of Oak in front of the Border, to the Top of the Wall.

At the Top there must be another Frame-work of firm Wood, for receiving the upper Edge of the Lights, and this may project five Inches from the Surface of the Wall. All must be close as in the Greenhouse, and Stove-work; and there must be at due Distances, Ribs of Wood slanting from the Top of the Wall to the Frame, to support the Lights from bending inwards.

This being prepared, the whole is in Readiness for Service. The two Ends must be closed in such Manner as to admit a Door in each, and this must be made firm, strong, and to shut close.

The

Octob. The Trees being thus defended before, are to be forced to blossom and fruit at an early Season, by the Heat of Dung behind. The first Time of applying this must be the third Week in November; and from that Period to their ripening, the Heat must be kept up successively by fresh Quantities of Dung.

The common Horse Dung, with the Litter among it, is to be used for this Purpose; and the Preparation it requires is only to be thrown up in a Heap for five Days before, that the Fermentation may be equal in every Part.

When it is thus ready, and the Frame is in order, let the Gardener draw a Line along the Ground behind the Wall; that is, on its North

Side, at five Foot Distance from its Base. The Dung is to extend as far as this, from the Wall at the Bottom, and is to be carry'd up gradually sloping to the Top; but it is to be there eight and twenty Inches thick.

About five Weeks after this let a fresh Parcel of Dung be got ready, laying it in a Heap as the first; and when it has lain the due Time to heat equally, let the old Dung be removed from the Wall, and this put in its Place, piling it up as the other, just to the Top of the Wall, for the Nature of it is to shrink down. This is to be repeated when there is Occasion, and this is all that is required in the general Construction of the Frame.

Octob.

C H A P. II.

Of the Kinds and Management of the T R E E S.

THE Fruits proper for forcing are the early Cherries, Apricots, Peaches, and Nectarines. Others may be planted for this Service, but these are the properest and most valuable. Gooseberries and Currants have been recommended, but one smiles at the Thought of bestowing this Attention and Expence upon such indifferent Fruit: it has also been advised to plant Strawberries upon the Borders. The other Thought was only ridiculous, but this is hurtful: the Gardener must be caution'd against it.

Nor need we add after this, that the planting Roses and Tulips is a most false Practice. This robs the Trees of that Nourishment they very much want; and the Damage these slight Things do the Fruit, is much more than their own Value. It is the Error of little Minds to do many Things together, not regarding that none can be done well in that Manner.

We have directed a Method of forcing of Strawberries in Frames; and the Flowers some direct to be raised on these Borders, will succeed much better in their proper Beds.

As these are design'd for the early ripening of Fruit, let them be devoted only to that Purpose; and the Trees being manag'd well, and allowed this Respite, will thrive perfectly. The Cherries will be ripe in April, and the other Fruits at a proportion'd Season.

The Trees should be planted at ten Foot Distance. This Quantity of the Wall they will very well cover; and if they were set at greater Distances, it would only increase the Expence, by enlarging the Quantity of Glass-work without any proportion'd Advantage.

When the Weather is mild, a little Air must be admitted, by opening the Door opposite to the Quarter whence the Wind blows; and before the Buds appear, gentle Showers should be admitted as well as Air; but when the Seasons grow severe, and the Buds are set, all must be kept close; the Heat of the Dung must be often examin'd, and well regulated, and the Gardener must go in at that Door which is least likely to admit the cold Wind.

When the Weather is mild, it will be advisable to open both Doors, and give the Air a free Circulation. The Time of the Day for this is about Noon, and the Opportunity must be taken when there is little or no Wind.

This is all that can be allow'd during the Severity of Winter; but in Spring the same Method must be follow'd as in the Beginning of the Season. In mild Days the Glasses must be a little open'd to admit the Air and Showers.

The Fruit will all be set by this Time, and consequently the Danger will be over which would have attended opening the Glasses, when the Trees were in blossom; for it is constantly found, that any Wet upon Trees in bloom, in these Frames, is destructive.

The later Fruit ripens, the more Pains are required to bring it to that Perfection; some have found three Times changing the Dung to be sufficient for Cherries; four I have generally seen succeed better; and for the Peaches there will be required about six. The best Time of Pruning is the Beginning of October, and all the Branches must be nailed close to the Walls.

E D E N :

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R LVI.

For the second Week in OCTOBER.

S E C T I O N I.

FLORA, or the PLEASURE-GARDEN.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. EVER-GREEN CENTAUREA.

Octob.
Pl. 56.
Fig. 1.

THIS is an elegant Plant; singular in the holding its Leaves through Winter, and worthy a Place in any Garden, though it do not come within the Rank of Flowers. MORISON has called it, *Jacea Lusitanica sempervirens*: Ever-green Portugal Knapweed; and DODART adopting the same general Name, retains also the specifick Epithets, adding another from its Stature, *Maxima*: the greatest ever-green Portugal Jacea.

LINNÆUS found in few Instances more Trouble than in the Arrangement of the *Syngenesious* Plants, of which this is one. He has established a large Genus under the Name *Centaurea*, and in that he comprehends the present Plant: he calls it, *Centaurea calycibus, ciliatis, foliis lanceolatis superne-ferratis*: *Centaurea* with ciliated Cups, and with the Leaves lanceolated and serrated on the upper Part: but this last Character is often lost in the Plant when kept in good Ground.

The Root is long, thick, woody, and hung with a few Fibres.

The first Leaves are numerous, long, narrow, sharp-pointed, and broadest in the middle: their Colour is a dusky green, and sometimes they are serrated, but not constantly or regularly.

The Stalk is five Foot tall, firm, and full of Branches: it is highly ridged, otherwise round, and is diversified with Streaks of a
Numb. LVI.

brownish red and green.

Its Leaves resemble those from the Root: they have no Footstalks, they are long, narrow, and lanceolate; their Colour a pale green.

The Flowers stand in scaly Heads at the Tops of all the Branches; and on short leafy Footstalks from the Bosoms of the upper Leaves: they are large, and of a dingy red.

The general Cup is swoln, roundish, and made up of numerous Scales, with the Tops edged with firm Hairs of a redish Colour.

In this Cup stands numerous Floscules of two Kinds, not tubular and ligulated as in the *Discoide* Kinds; but both tubular, though of different Form.

In the Disk or central Part are a Number of Flowers, which have both the male and female Organs. These are oblong, and have the Base tubular and very small: the Verge is swoln and oblong, and divided at the Extremity into five narrow upright Segments. In the outer Part of the general Head stand a smaller Number of Floscules, which have only female Organs; these are larger than those of the Disk, and have the tubular Part narrow, but gradually dilated, somewhat bent; and the Verge oblong, oblique, and irregularly divided into Segments. Thus is formed the general Head of this Flower.

In the Floscules of the Disk the Filaments
8 F
are

Octob.

Octob. are five: they are very short and delicate; and their Buttons are very long, and connected into a tubular Body. In the midst of these is placed a single Style, and this is terminated by an obtuse Head with a fine split Point. It rises from a small Rudiment of a Seed placed beneath the Flower.

The Floscules on the Verge have neither Filaments nor Style, Buttons nor Head; but there is a Rudiment of a Seed, as in the others, placed beneath the Flower.

The five tubular Buttons shew the Plant to be of the *Syngenesious* Class; and as the Rudiments of Seeds under the female Flowers are always abortive, the Division to which it belongs is that of the *Polygamia frustranea*. In many of the *Syngenesia*, these Flowers, which have only female Parts, have them compleat, and the Seeds do not ripen in any others: these are the *Polygamia necessaria*, in others Seeds ripen equally after the Hermaphrodite Flowers of the Disk, and those female ones of the Rays: this is called *Polygamia equalis*, but in this Plant the Form is altogether useless, and the Rudiments of Seeds under the female Floscules answer no Purpose toward the Propagation of the Plant.

Culture of this CENTAUREA.

It is a Native of *Spain* and *Portugal*, where it is too common about Vineyards; and every where near cultivated Grounds, remaining green through Winter, and flowering the greatest

Part of the Year. With us it lives freely in Octob. Gardens, and requires no farther Care than the Choice of a warm dry Spot, and good digging of the Ground.

The Method of raising it is from Seeds. These ripen very well with us, and should be sown in the Beginning of *April* on an open Spot of Ground: when the young Plants come up, they must be weeded, and at Times watered; and when they are three Inches high, they must be transplanted into another Bed in the Nursery, allowing them a Foot Space asunder.

In the latter End of *September* they must be removed into the Garden, and placed where they are to remain. They must be dug out deep, and with a good Ball of Earth; and there must be a large Hole opened for their Reception. They should be allowed a Yard's Distance, and the Ground being kept weeded about them, and constantly refreshed with Water when too dry; they will flower all the succeeding Summer, till late in Autumn, with great Profusion.

To promote this, the Flowers should be nipped off as soon as their Beauty is past; except where a few are left for Seeds. This should be done once in two or three Years, for the Plants flower much more elegantly the second and third Season than afterwards.

The Gardener understands by what we have had Occasion often to say on this Subject, that this is the proper Management of all the large, robust, hardy Plants, taken from Fields into the Garden.

2. B R O A D L E A V E D S C A B I O U S.

Pl. 55.
Fig. 2.

This is one of those Plants which owe their Place in our Gardens to the Singularity of their Aspect rather than their Beauty.

The botanical Writers have a long Time been acquainted with it, and though the Manner of Growth and Flowering be very singular, the Characters of the *Scabious* Kind are so thoroughly impressed upon it, that they have all called it by that Name. C. BAUHINE has called it, *Scabiosa stellata folio non dissecto*; DODART, *Scabiosa stellata prolifera*: stellate Scabious with undivided Leaves, and proliferous Stellate Scabious. This last Name has been given it from the Growth of the young Shoots from the Base of the old Flowers, as in the common Cudweed, the other from the Disposition of the Flowers.

LINNÆUS refers it as the rest to the *Scabiosa* Kind, and distinguishes it from the other Species by the Addition of *Corollis quinquefidis, foliis lanceolatis subintegerrimis*: Scabious, with the Floscules divided into five Segments; and the Leaves lanceolate and nearly entire.

The Root is long, and hung with many Fibres.

The Stalk is round, firm, upright, simple, and covered with a light Down.

The Leaves are placed in Pairs, they have short broad Footstalks which surround the main Stalk at the Bottom; and these are larger to the lower than to the upper Leaves.

The Leaves themselves are oblong, considerably broad, of a pale green, soft to the touch, a little hairy, and lightly rib'd: they are broadest toward the middle, sharp-pointed, and lightly indented along the Edges.

The Flowers are large, naturally of a whitish Colour, tinged a little with green and with purple. Sometimes they are perfectly white; and sometimes they are throughout stained with a light Tinge of the Red. They are composed of numerous Floscules arranged in a Kind of Head; and they are placed in the Divisions of the Branches, and at the Tops of the Side Shoots.

The Progress of the Growth is this: a large Flower appears upon the Top of the Stalk; and on each Side of this there soon after rises a Footstalk: each of these is decorated with two or three Pairs of Leaves; and has at its Top another Flower: from the Bases of these rise other Shoots, as at first usually two, sometimes four; and the Flowers at length appear fixed

Octob. fixed in their Divarications, or Clefts of the Stalks and Branches.

The general Cup, which surrounds and supports the Head of Floscules, is formed of numerous Series of Leaves which enclose the Receptacle, and are fixed upon it; the inner ones are smaller, and the outer gradually larger.

Beside this each Floscule has two separate Cups, an outer and an inner, both fixed to the Rudiment of the Seed. We have not before had an Opportunity of describing the *Scabious* Flower: it is singular, and the Characters, though particularly plain and obvious in this Species, are the same in every Kind. The outer Cup is shut, folded, and of a membranaceous Substance; the inner Cup is formed of one Piece, divided deeply into five pointed Segments.

Each Floscule is formed of a single Petal, long, hollow, upright; wider toward the Mouth, and there divided into five irregular Segments, two smaller and three larger: the large ones standing outward.

The Filaments are four in Number, they are very slight and feeble, and they are crowned with oblong incumbent Buttons.

The Style is single, slender, and of the Length of the Floscule; it rises from a Rudiment of Seed placed underneath the Receptacle of the Floscule, and covered with a particular Scabbard in the Manner of a Cup: the Head is obtuse, and obliquely nip'd.

The Seeds, which follow, are oblong, surrounded with their proper Membrane, and crowned with their Cups; and they are fixed to a common Receptacle of a convex Form, and separated by the Leaves of the Cup.

The four Filaments refer this Plant to the *Tetrandria*, the fourth Class in the *Linnean* System; and the single Style places it among the *Mono-gynia*.

The hasty Observer might be apt to place

it among the *Discoide* Plants, and the *Scabious* Octob. has been used to stand near them, if not among them, in the old Arrangements of Botany: but in the classical Distinctions of LINNÆUS being deduced from the Filaments according to their Number and Disposition, this is altogether separated from the *Syngenesia*, which have five Filaments with coalescent Buttons; and is brought to the simple Class of the *Tetrandria*.

Culture of this SCABIOUS:

It is a Native of the East, and of some of the warmer Parts of *Europe*, but it bears our Seasons very well in the common Ground; so much Regard being shewn to its natural Climate, as to allow it a warm spot and a dry Soil.

It is to be raised from Seed, and this should be sown in the Nursery: the Seedling Plants, when big enough to remove, should be at once brought into the Garden.

The Seed should be saved from a vigorous Plant, and carefully hardened and preserved through Winter.

In the Beginning of *April* it must be scattered over a new-dug Piece of Ground in the Seminary, and when the Plants rise they must be thinned; and weeded, and often watered.

When they have six Leaves, let as many be taken up as it is intended to preserve, and planted in a warm Part of the Garden. They should stand at a Foot Distance, and they must be weeded and watered as the other Plants; they require no other Management: only that those, from which Seeds are intended to be saved, should not be permitted to ripen many Flowers. The principal or first Flower should always be preserved for this Purpose, and about two others.

3. PURPLE TANZY-LEAVED ACHILLÆA.

Pl. 55.
Fig. 3.

The common Yarrow that flowers by our Way-sides, when Accidents of Growth give a Blush of red to the Flower, would be thought, if found in *America*, a glorious Acquisition to our Gardens.

'Tis to this Genus, among which he has mixed several other Plants, LINNÆUS has given the Name *Achillea*; and the Species of which we treat in this Place, has more Elegance of Leaf than the common *Yarrow*, and a little crimson in the Flower.

The old Authors have not been unacquainted with the Plant. C. BAUHINE calls it in a lower and poorer State, *Tanacetum minus album odoræ camphoræ*: small white-flower'd Tanzy, with a Smell of Camphire. TRAGUS much better named it, *Millefolium nobile*: the noble Yarrow; and MORISON has called it, *Millefolium Tanacetifolius*. DODART, *Millefolium montanum purpureum*

tanacetifolius: purple mountain Yarrow, with Tanzy Leaves.

LINNÆUS calls it, *Achillea foliis bipinnatis pinnis distantibus, utrinque subseptenis obtusiusculis*: *Achillæa* with Leaves doubly pinnated, the Pinnæ distant and obtuse, and about seven Pairs on each Rib. The Name is very expressive, but Culture varies the Number and Division of the Leaves, tho' they keep in general this Form.

The Root is long, thick, and hung with many Fibres: it divides toward the Top into several Heads, and each sends forth many elegant Leaves and a firm Stalk.

The Leaves are long, large, and elegantly divided: each is composed of numerous Pinnæ fixed on the two Sides of a middle Rib, which is terminated by an odd one. These Pinnæ are not single little Leaves, as in many Cases, but they are them-

Octob. themselves divided by deep Incisions in the pinnated Manner, and stand remote, so that the whole Leaf is extremely elegant. The middle Rib is soft, of a purplish Colour toward the Ground, and lightly covered with a grey scattered Down. The whole Leaf is six or eight Inches long, and has a strong Smell not unlike that of Camphire, and with some Flavour of the Tanzy, which it resembles also in Division, and a general Form.

The Stalk is round, upright, not jointed; striated and covered with a light greyish Down. It is red toward the Ground, but in the upper Part of a whitish green.

The Leaves on this are numerous and very elegant: they stand alternately; with young ones in their Bosoms, and they are long, narrow, and pinnated. The Pinnæ are very distinct, though close placed; and though they are not divided again down to the Rib, as in the radical Leaves, they are yet deeply and elegantly indented.

The Flowers terminate the Stalk in a large irregular Umbell, and their Colour is sometimes white; but properly, and always when the Plant is well managed, a delicate pale Crimson.

As the general Umbell is composed of many small Flowers, each Flower is in the same Manner composed of many Floscules arranged in a common Cup. This is of an oval but somewhat oblong Form, and is composed of numerous oval Scales, pointed and placed on one another as Tiles.

The Floscules in each Flower are of two Kinds, tubular and ligulated: the tubular form the Disk, and have compleat male and female Organs of Impregnation; the ligulated are a Kind of Rays in the Verge, which have only female.

The tubular Floscules have a Rim cut into five expanded Segments. The ligulated Floscules of the Verge are broad, expanded, and cut into three Parts at the Top, the middle one of which is smaller than the others.

In the tubular Floscules are placed the Filaments; they are five, and they have oblong Buttons which coalesce and form a Cylinder, with a single slender Style of the Length

of the Filaments, rising from a small Rudiment, and crowned with an obtuse Head. Octob.

In the female Floscules there are no Filaments, but there is underneath them a Rudiment of a Seed, from which rises a single Style with two obtuse Heads which turn back.

The Seeds ripen equally after the tubular and ligulated Floscules; and they are placed on an oblong and somewhat conic Receptacle; and separated by a Kind of filmy Scales.

The Class of the Plant is seen in the Coalescence of the Buttons into this cylindrick Form: it is the Mark of the *Syngenesious* Tribe. And as the Seeds under the tubular Floscules ripen as well as those with the female, the Subdivision to which it belongs is that of the *Polygamia superflua*.

Culture of this *ACHILLÆA*.

The Plant is a Native of many Parts of Europe, nor is limited to those in warmer Latitudes, but it flourishes best in them; and naturally affects a loose, deep, and not too rich Soil.

To raise it in Perfection in the Garden we must copy this.

The Seeds ripen freely with us, and should be sav'd with Care, hardened on a Shelf, and kept in Bags till Spring.

Let them be sown upon a Piece of common Ground in the Nursery; and when they rise, thinned, weeded, and watered.

In May five or six of the finest Plants should be taken up, and brought into the Garden. They will not flower the same Year; but their Leaves are very handsome, and they will succeed better when they have only this one Remove than if they had more. To improve them to the utmost the Mould should be dug out where they are to stand in the Garden, and some fresh Pasture Earth put in its Place.

They will flower the succeeding Summer, and remain good three or four Years, but at the End of that Time it is best to have a fresh Succession; the Seed of which should be saved from the second Year's Flowering, for they never are so perfect from any other. In all States the Plant is of distinguished Elegance.

4. VARIEGATED ROUGH SILENE.

Pl. 56. Our Student is to be informed, that under Fig. 4. the generical Name *Lychnis*, the earlier Authors had brought together a great Number of Plants utterly distinct from one another in those Characters on which the Establishment of Genera depend. This LINNÆUS saw: he reformed the Abuse, and from one imaginary Genus, *Lychnis*, made many real Genera all truly distinct.

One of these is the *Silene*, to which the elegant and singular little Plant, here described, belongs.

It is mentioned by the others under the

general Name *Lychnis*, and the Distinction is taken from the peculiar Roughness of the Leaves and Variegation of the Flowers. DODONÆUS called it, *Lychnis hirsuta minor flore variegato*; a Name most others have adopted. LINNÆUS, referring it to his new Genus *Silene*, calls it *Silene, petalis integerrimis subrotundis; fructibus erectis alternis*: *Silene*, with rounded and undivided Petals, and with erect Seed-vessels in alternate Order on the Stalks.

The Root is slight, oblong, and hung with a few Fibres.



1
Evergreen Centaurea

2
Broad leaved Scabious

3
Purple Savvy leaved Yarrow

4
Paired edged rough Silene.

5
Yellow Oriental Cornflower

6
Golden Cotyledon

Octob.

The Stalk is round, rough, jointed, a Foot and half high, and divided into many Branches.

The Leaves stand two at a Joint: they have no Footstalks; they are oblong, obtuse, largest at the End, and rough. Their Colour is a pale green; and the Hairs to which they owe their Roughness, are white, firm, and stiff.

Toward the Tops of the Branches the Leaves are narrower, and they stand not opposite but alternately, and from the Bosom of each there rises a single Flower.

At the Summit of the Stalk these Leaves stand close, and are but so many Rudiments; and, consequently, the Flowers are disposed there in a short Spike, or little Tuft; but lower down, as the upper Part of the Stalk lengthens by the continued Growth of the Plant, the Leaves stand much more distant, and the Seed-vessels are placed upright, and perfectly distinct in their Bosoms.

The Flowers themselves are small, but extremely pretty; they are of a deep red, but edged with a Border of white, regularly continued round each Petal; and the extream Edge is fring'd with a Series of stiff Hairs.

The Cup is thick, and of a clavated Form, permanent, composed of a single Leaf, and dented in five Places at the Top.

The Body of the Flower is form'd of five Petals: these have narrow Bottoms of the Length of the Cup, which have a singular kind of additional Edges: the broad Parts of these Petals expand themselves regularly and freely. The opening into the Hollow of the Flower is defended by a kind of Crown form'd of ten Scales; two of these rise from the Neck of each Petal, and this Corona is the Nectarium of the Flower.

The Filaments are ten; they are pointed, and crown'd with oblong Buttons. Underneath is the Rudiment of the Fruit, of a cylindrick Form, and from this rise three Styles longer than the Filaments; they are crown'd by Heads which turn from the Sun.

The Seed-vessel is cylindrick, and is cover'd by the Cup; it is divided into three Cells, in

which are numerous Kidney-shaped Seeds, this Seed-vessel when ripe, bursts in five Places at the Top.

The Class of the Plant is seen in the Number of the Filaments; they are ten, and they refer it to the *Decandria*, the tenth in the *Linnean* System. The three Styles refer it also to the *Trigynia*, the third Subdivision of that Class.

Culture of this *SILENE*.

It is an Annual, native of the warmer Parts of *Europe*; *Spain*, *Italy*, and the South of *France*, and is one of the common Weeds of their plough'd Fields and Vineyards. It is easily raised in our Gardens, and though when sown in Spring, it decays the same Summer after flowering: it may be raised by sowing in Autumn, and the Plants will flower earlier that Way, and better ripen the Seeds: but the best Way to keep a Succession for the greatest Part of the Summer, is to sow it at both these Times.

Let some good Seed be saved from Plants which flower early, and spread upon a paper'd Shelf to harden.

Let it be divided into two Parcels, and one Quantity sown in the latter End of *August*, and the other the Beginning of the *April* following. Both Parcels must be sown in the Flower Garden, upon the Spots where they are to remain, for they do not succeed nearly so well when transplanted.

When the Plants come up let them be thin'd; and afterwards weeded and watered. They should be left at about a Foot Distance, and thus they will flower in Perfection. Those sown in Autumn will blow early, and ripen good Seeds; those sown in Spring will come into flower when the others are over, and continue till the Frosts destroy them.

The Seeds should be saved from the Plants of the Autumn sowing; and particularly from those which blow first, for they are always the strongest.

5. YELLOW ORIENTAL CORNFLOWER.

Pl. 56.

Fig. 5.

The Gardener is not insensible, that from the common *Cyanus*, *Cornflower*, or *blue Bottle* of our Fields, cultivated in Gardens: there are many pretty Varieties in Colouring, and the Plant is much enlarg'd in Size. This is a *Cornflower* of a nobler Kind, and well worth his Notice.

He is to know, that the Name *Cyanus* is lost in the modern Genus *Centaurea*; one Species of which we described first in this Number; and that this is another. The old Authors however called it *Cyanus*, and by that Name he has hitherto heard it called by those who raise it.

MORISON calls it *Cyanus orientalis major foliis oblongis flore luteo*; and DODART, *Cyanus orientalis flore luteo fistuloso*: yellow fistulous flower'd *Cyanus*.

Nº 56.

LINNÆUS does not allow it to be distinct in Species from the great oriental purple Kind; and referring that to the *Centaurea*, he adds as the Distinction of the Species, *Calycibus inermibus subrotundis glabris, squamis ovatis foliis sinuatis*: sinuated leav'd *Centaurea*, with rounded, smooth, and naked Cups form'd of oval Scales.

The Root is long, hard, woody, and hung with numerous Fibres.

The Stalk is round, firm, divided into many Branches, and a Yard in Height. The Colour is brown in general, deeply stain'd with purple toward the Ground, and on the extream Parts greenish.

The Leaves are numerous, long, and of a dusky green: they stand at Distances irregularly upon

8 G

Octob. upon the Stalks, and they are deeply cut and divided; but in a wild Manner.

The Flowers are large, and of a fine delicate yellow: they terminate all the Branches; and beside their Number and their Colour, both which are great Recommendations, they have a very highly perfumed Scent.

They are form'd as the Flowers of the first described *Centaurea*, but larger in all their Parts, and with smooth Cups. These are composed of a small Number of broad oval Scales laid one over another; and the whole Cup is swoln toward the Bottom, and gather'd up in a kind of Neck at the Top.

The Floscules contain'd within this are of two Kinds, but all tubular: the greater Number are small, and compose the Disk; the others are much larger, and make the Verge.

The Floscules in the Disk have each five short Filaments, with long Buttons, which coalesce into a Cylinder: they have also the Rudiment of a Seed underneath, and a Style: the larger, or Female Flowers of the Verge, have only the Rudiment of a Seed underneath, and that abortive.

The Class and Place of the Plant are known from these Characters; the coalescent Buttons shew it to be one of the *Syngenesia*, and the abortive Rudiment of the Floscules of the Verge shew it to belong to the *Polygamia frustranea*.

Culture of this CENTAUREA.

Octob.

It is an Annual: Native of the East, but hardly enough to bear the cold of our Climate through the whole Period of its Growth. The common Mould of the Garden is too rich for it; the best Compost is a Mixture of equal Parts of this and Pasture Mould.

Let such a Mixture be made in the End of *March*, and thrown into a warm Spot of the Garden.

Let the Surface be levelled, and Seeds sowed the preceding Autumn be sown upon this, pretty thick: when the Plants come up, let them be thin'd, and encouraged by frequent Waterings. They are never to be removed out of this Spot, but from Time to Time the weakest are to be pulled up, till those favourite Plants which remain have a Yard Distance.

Let not the Gardener think the Ground wasted upon them in this Manner: there will be more Flowers on four Plants thus manag'd, than upon ten in the common Way; and the Plants themselves will be handsomer, and shew themselves the better.

They must be weeded frequently, and the Earth at Times broke between them; and one Plant being marked for Seed, Care must be taken that it do not exhaust the Root, by producing too many Flowers.

The strongest Plant should be selected for this Purpose, and this is usually the first that comes into Flower: the Seed should be gather'd when just ripe, and kept till Spring.

6. GOLDEN COTYLEDON.

Pl. 56.
Fig. 6.

Few Plants can better claim their Place for Singularity than the *golden Cotyledon*; nor is that its whole Recommendation. The Flowers are numerous, and so well disposed, that the Cluster of them never fails of pleasing even the incurious.

The old Authors were acquainted with it. RAY has copy'd from MORISON, as he from others, the Name *Cotyledon radice tuberosa longa, repente*: *Cotyledon* with a long, creeping, tuberous Root. CAMERARIUS has called it, *umbilicus repens*: and VAN ROYEN, *Cotyledon foliis peltatis*: *Cotyledon* with Shield-like Leaves.

LINNÆUS preserves the same generical Name, and adds as the Distinction of the Species, *foliis cucullatis, serrato-dentatis, alternis, caule ramofo floribus erectis*: upright, flower'd, branch'd *Cotyledon*, with cucullated Leaves indented deeply at the Edges, and those on the Stalk placed alternately.

The Root is long and thick; it runs under the Surface, and is brown on the Outside, white within, and hung with many Fibres: from several Parts of it there also stick out little Tuberosities, which send out Fibres of their own, and

run every Way; encreasing the Plant abundantly.

In Autumn appears a Cluster of beautiful Leaves; and in Spring when they decay, rises the Stalk; this is a great Recommendation of the Plant, that it has two States of Beauty; for the Leaves which continue green during Winter, are remarkably distinguish'd by their Form and Colour. Eight or ten of these form the Cluster; they have long Footstalks, and they rise tolerably erect.

The Footstalks are thick, fleshy, hollow'd, and purple toward the Ground.

The Leaves are rounded, but they are cut in deep at the Infertion of the Stalk; this not being fixed under the Leaf, but at the Edge within this deep Nick: the whole Edge of the Leaf is deeply and irregularly indented. Its Substance is thick, fleshy, and full of Juice; and the Edges rise all the Way from the Footstalk on each Side, so that the whole is elegantly hollowed.

Toward Spring these often acquire a redish Hue, and this is the first Stage of their Decay: in *April* they fall to the Ground, and fade, and in their Place appears the Stalk for flowering.

This

Octob. This is robust and firm, round, juicy, and fifteen
Inches high.

There are a few scatter'd Leaves on it: they are placed at Distances, and are of a Figure approaching to oval; of a firm Substance, dented at the Edges, and of a Pea-green Colour.

The Flowers terminate the main Stalk in a long thick Spike, a Hundred or more of them growing close to one another; and frequently when the Plant is well manag'd, there will be thrust from the Sides of the main Stem, two or more Branches, all loaded at their Tops in the same Manner with thick set Flowers.

The Flowers are singly small, but their Colour is an elegant yellow, and in these vast Clusters they are sufficiently conspicuous. Each Flower has its Cup, which is form'd of a single Leaf, cut at the Top into five Segments.

The Body of the Flower is form'd also of a single Petal, tubulated, bell-shaped, and cut at the Verge into five Segments, which turn back.

The Filaments are ten; they are smallest toward the Top, they rise strait upright, they are of the Length of the Flower, and they are crown'd with upright Buttons, mark'd with four Furrows.

There are five Rudiments at the Base, and as many Styles rise from them. The Rudiments are long and thick; and the Styles are of the Form of the Filaments, but they exceed them in Length, and have simple Heads.

At the Base of each Rudiment there is also placed a small hollow Scale; these constitute the Nectarium of the Flower.

The Flower is followed of five Capsules filled with small Seeds.

The Number of the Filaments and Styles shew the Class, and Place of the Plant. The Filaments being ten, refer it to the *Decandria* of LINNÆUS, and the five Styles place it among the *Pentagynia*.

Culture of this COTYLEDON.

The Plant is a Native of *Spain* and *Portugal*, where it lives in the Cracks of damp Rocks, but it will thrive very well in the open Ground. Its natural Situation, however, may give the Gardener a Hint of great Service, respecting its Use.

In our good Gardens, there are Grottoes which make an elegant Appearance; and have never so much an Air of Nature as when they are decorated by proper Plants growing from the Crevices. This will be excellent for that Purpose, and it will very well succeed, if sown upon some good Mould laid for that Purpose, in the Openings of the South Side of the Work.

For raising it in this Manner, nothing more is required than to scatter the Seeds upon such Parcels of Mould in Autumn; covering them with a Quarter of an Inch of the same Soil, and upon that scattering some more of the Seeds, which are to be left naked.

There is an Uncertainty in the Growth of these Plants, and it is always prudent to take this double Chance for it.

In the common Way of Culture the Plant must have a very well chosen Part of the Garden to bring it to Perfection; and must in the same Manner be sown upon the Spot where it is to remain.

Let the Gardener chuse a Corner of the Ground where there is naturally some Dampness, and which is not exposed to the cold Winds, or too much Sun.

In this Place let him bury a Quantity of rough Fragments of Stone, and fill up the Cracks with rich Mould. Let him scatter some of the Seeds upon this uneven Surface, and sift over them a Quarter of an Inch of Mould. Let him upon this scatter some more of the Seeds, and lay upon them a Quantity of damp Moss. Let a Reserve of the Seed be made; and this sowing having been perform'd in Autumn, let some of the saved Seed be scatter'd on between the Moss, once in a Fortnight, from *March* to *May*.

There is no saying which Parcel of Seed will take; sometimes it is one, sometimes another; and this according to Chances, of which we know nothing: from such repeated Sowings some Plants will come up, and they will flower the second Year.

After this they need only be left to Nature, for they will take Care of themselves, and from their scatter'd Seeds there will never fail to be a Succession of new Plants.

From this proper and original Bed, the Gardener may, if he pleases, remove now and then a Root into a Pot, or into some other Part of the Garden.

The Plants will succeed in Proportion as the Soil resembles that where they were raised, but they will be no where so vigorous as on the original Spot.

One Caution it is necessary to give the Gardener, with respect to this, and other Plants of such uncertain Growth, as the *Orchis* and *Serapias* Kinds: it is that if no Plants appear at the expected Time, he be not in haste to break up the Ground; for there is no judging how long they may lie in the Ground for want of those peculiar and unknown Accidents which promote their Growth; and yet retain their vegetative Quality.

In general, what I have observed of these Kinds is, that those Seeds scatter'd upon the Surface, and left quite uncover'd, succeed better than such as are sown in what is called a more regular Manner. This is Nature's Method; and it appears that these small Seeds more than others, need the Impregnation of Air and free Dews. However, in all such Cases, beside the Quantity that is left upon the Surface, it is adviseable to have a Parcel bury'd at a small Depth under it: for the Winds may blow off great part of those Seeds which were left uncover'd; and if this happen, the same Violence will lay bare some of the others, so there is still the Chance.

S E C T. II.

Of the Art of raising double FLOWERS.

WE enter in this Place upon one of the most nice, and at the same Time, of the most important Articles of the Gardener's Profession; much labour'd, and worthy of much more Attention; but hitherto left in great Uncertainty.

We see the Variety in Nature, which we so difficultly procure by Art.

The Meadows shew us frequent Instances of what is found so difficult in Gardens: the double Ladysmock, and double Crowfoot, we have described in preceding Parts of this Work; the Marsh Marygold is also found double among them; and so many more, that it would be tiresome to enumerate all.

These Wantonnesses of luxuriant Nature, we admire without understanding their Causes: and some have gone so far as to suppose, that because Nature does something in this Way, all we see is of her doing. Others seem to make easy, what to these seems impossible; and upon the whole, there is no Point in the Art of Gardening on which the Writers are so contradictory, or Practice is so various.

Our honest PARKINSON, who wrote to the best of his Knowledge, gives his Opinion flatly, that Art has no Power to raise double Flowers from single: but that whatsoever is done, Nature alone has effected. That People finding Plants in the Field with double Flowers, have brought them into the Garden, and have increased them, but that the original Stock is all from Nature.

On the contrary, the *Dutch* in common profess to know the Secret; and in their Writings, declare all Flowers may be doubled by good Culture.

They affect to disclose the Method in ænigmatical Terms, as Chemists of old spoke of the Philosopher's Stone; and presume that they have taught Adepts in the Art, that which themselves never knew.

It is easy to see that both these say too much: yet both have their Followers; even against Experience.

We see in contradiction to the *English* Writer, that we can at any Time raise double Stock July-flowers, and double Flowers of many other Kinds, from the Seeds of such as are single; and we know that a Thousand Trials have been made in vain upon other Plants, even by those who boasted that they knew the Secret. What neither Party have advanced, therefore it is plain is true altogether. Indeed the Research lies too remote from common Observation, to have been pursued happily in the dark Times of Science.

Botany is now so much better understood, that there is more Hope of it; and from the now known Structure of the Parts of Plants, from Nature, and from Observation, the Subject may be traced with better Success.

The right Course will be, first to examine what we see in Nature; and when we have traced the Cause, then it will be Time to have recourse to Art and Imitation.



C H A P. I.

Of natural double FLOWERS.

WHAT we have seen in our own Country of Flowers, naturally double, may shew us in the first Place, that it is rather Nourishment than Heat (the two great Agents in Vegetation) which occasions it.

Among the *English* Plants which we see with double Flowers wild, ten are found in Meadows for one upon a dry Piece of Ground.

The several Kinds already named, are all Natives of our Meadows; and I have observ'd, that where they have been double, the Soil has been both richer and moister than elsewhere.

Even abundant Moisture will do it alone, for I have traced the double Ladysmock over some Tracts of Land in the *Isle of Ely*, where the Earth

Earth danced under the Feet, as in a Bog; and where it consisted of that little understood Substance, Turf: an Earth almost entirely without Mould.

On the contrary, we see that an enrich'd Soil alone, has nothing of this Effect. The Plants upon it will grow much larger than elsewhere, but 'tis the Leaves and Stalks, and not the Flowers, which have the Advantage.

'Tis the same Thing on absolute Dung: there are Plants which will take their Nourishment solely from it, and they will grow to an uncommon Size; but 'tis in the general Habit, not in the Flowers in particular.

We scarce see or hear of such a thing as a double Flower

Octob. Flower on the Dunghil Plants. That this does not take the Effect of increasing the Number of Petals, is evident in the Fields as well as Gardens; and in the same Manner what we have mentioned in regard to Moisture as so obvious in this Effect in Meadow Plants, is confirmed in those of the Garden.

The Ten Weeks Stock is a constant Instance: 'tis the Custom to sow this at a Season when few Showers are expected; and as it grows thro' Summer with less Wet than those Plants which are sown in earlier Spring, the Flowers are generally small and single.

The Gardener does not endeavour to improve them by Waterings, for it has not been known before that it is the Effect of this, well managed to enlarge and increase the Petals of Flowers, but Nature often does it: wet Summers happen, and in these the Flower of that Stock is always vastly finer than in others; much larger on all the Plants, and in several double.

We see in this which is an Instance in Nature, though the Plant grow in a Garden, a Proof which all will own, though none have before attended to it for this Information, that Wet has a great Share in the doubling of Flowers.

Let us consider what this doubling is, and what are the common Operations of Nature in like Cases, and we shall be the more convinced of it. We have shewn that this Encrease of Petals is from a Number absolutely growing from the Receptacle of the Flower or of the Seeds; or from a Degeneracy of the numerous Filaments in other Kinds into Petals.

We see in the Grasses a Tendency to leafy spikes: Grains shoot in the Ear, and Leaves of the Plant rise round about them in Places where they do not usually appear; or they rise in Tufts at the Heads of the Stalks in the Place of Spikes.

The first is an Instance like that of the Growth of Petals in extraordinary Number from the Receptacle; and the other of vitiated Parts, for the Leaves should have formed the Films and Husks of the Ear.

The Grasses have no Petals, therefore the Redundance must be in Leaves; and the Case is so far parallel: but on what Occasions does this happen? Every Farmer knows. 'Tis not in our dunged Fields; but in rainy Seasons. So much then is clear; that in the Work of Nature on this Head abundant Moisture is the most obvious Agent.



C H A P. II.

Of ripening Seed for double FLOWERS.

ONE great Cause of the ill Success of those who have attempted the Practice of doubling Flowers, has been from their taking up the Work too late. They think it is enough if they begin with the Seed: but we are to tell them, that a great deal is to be done before that, if they would rationally attempt this Business. We know how early in perennial Plants, the Bud for the succeeding Year's Flower is formed. We have shewn this, speaking of the *Auricula*, and have directed a timely Care for that Reason; for all Improvement is to be attempted in perennials at the Period of forming the Bud: and in the same Manner all doubling of Flowers is first to be undertaken, at the Time when those Flowers are about to be formed, from which the Seed is to be saved for the new Progeny. The Foundation is to be laid there; and the Work must be perfected by the Culture of the Plants raised from it.

Every Gardener knows the Advantage of changing Seeds with some Friend on whose Integrity he can rely: the best Way is, indeed, for two Persons, who enter into such an Intercourse, to mark the Seed Plants in each others Ground at the Time of Flowering; and when the Seeds are ripened, to take off the Heads themselves: thus there will be no Suspensions of false Dealing from real Accidents,

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as may otherwise happen.

We will suppose the Gardener possessed of such Seed; and that he raises his common Stock of Plants by it in the usual Way: it is no Matter of what Kind, we write here of doubling Flowers in general, not of any particular Species.

When the Plants raised from these Seeds have acquired about a third Part of their Bigness, let him by all possible Means promote their free Growth: this is the Period at which the Buds of Flowers take their final Form.

Let him clear away the Surface of the Mould between the Plants to an Inch Depth or more, if that can be done without impairing the Roots; and in its Place let him spread some perfectly fresh and rich Garden Mould, or some of the Compost appropriated to the Plant. On this let him give a gentle Watering, and let this be repeated afterwards daily in small Quantities. Always let him keep in Mind, that he is not now endeavouring to double for the last Time the Flowers of his Plants, but to feed and ripen the Seeds of those Plants from which he expects such a Stock.

Let only a few Flowers ripen upon each of these Plants; and let not the Root exhaust itself by opening more than are intended to be set for Seeds; in the common Way the Flowers weaken one another, and Part of the Seed is always bad.

8 H

As

Octob. As the Seed which follows the first Flowers is the best, let these alone stand for it: when as many are opened (if the Plant be of the many flower'd Kinds) as are intended to be suffered to remain, let the rest be taken off in the Bud. Let the Stalks be tyed up, and the Earth cleared to a good Distance round these Plants, and often broke with a Hoe; and watered.

Let the Growth of the Seed be well watched, and let it remain no longer on the Plant than 'till of the full Size, and a little hardened; then spread it on a Shelf or Table in an airy Place; and when it is well dried in the Pods,

Octob. separate it; and dry it again loose. Thus hardened, tie it up in Bags, and reserve it till the Season of sowing. Let there be a large Quantity saved in this Manner; and if any imperfect Seeds appear among them, let them be pick'd out and thrown away.

There is nothing so hurtful in the raising these Plants for double flowering, as the Quantity of bad Seed usually preserved among the good: to this is owing the Abundance of bad Plants to a few fine ones. In the Way we direct the Seed to be managed, the bad will be much fewer; and the whole Growth more promising, robust, and hearty.



CHAP. III.

Of sowing for double FLOWERS.

WE write for those who dare attempt this Improvement upon rational Principles; and shall not suppose they will grudge the necessary Quantity of Ground.

As we have directed a large Parcel of Seed to be sowed, we shall advise a much greater Extent of Bed to be prepared for it, then is usually judged necessary; twice or three Times the usual Allowance; for in the common Way, Plants, whose full Vigour is expected in their succeeding Growth, are stunted and starved by crowding upon one another.

Let a Part of the Seminary be chosen that is open to the South-East, that has a gentle Ascent, and through which the Air blows freely, though not from the cold Quarters. Let there be no Shade of Building, or Drip of Trees; no large Plants near, nor any thing to take the Nourishment from the Seedlings.

Let such a Piece of Ground be marked out as we have mentioned, and the Mould dug away half a Spade Depth.

Bring in Soil from some Heap of Compost suited to the Nature of the Plant. Let it be such as has lain eight or ten Months, and has had nothing growing upon it.

Let as much of this be brought into the Place as will raise a Bed a full Spade Depth or something more; and let this be carefully laid in a sloping Form; the Back or highest Part of the Bed being to the North-West, and the Slope to the Exposure. One Inch in seven Foot is about the proper Measure; so that in a Bed of twenty-one Foot, which is a convenient Length, there will be a Descent of three Inches.

The whole Piece being thus made into one broad Bed, is to be divided into several by Alleys running up the Length of it. These should be opened at five Foot Distance, and be just so broad as to give Room for walking up and down; to observe the Condition of the Plants, and perform the necessary Operations.

Upon these Beds, thus divided and laid,

let the Seeds be sown very thinly, and let a little Mould be sifted over them: a Straw's Breadth is in most Cases sufficient: but this must be according to the Nature of the Plants, which we have severally delivered already.

When the Seeds are covered, let a second Parcel be scattered upon the Surface, and left uncovered: this should be a smaller Quantity than the first; and both together should not be so much by half as what is commonly used for an equal Space of Ground. The Gardener will remember, that all the Seed is choice, perfect, and like to grow; this makes the less needful; and there will not be that Abundance of bad Plants to be removed afterwards.

Three Days let the Seeds lie as they were put into the Ground; but on the fourth give the whole Beds a regular and gentle Watering; and let this be, from that Time forward, repeated every third Day, except when Showers prevent.

If violent Rains come in the mean Time, the Beds must be defended by a Mat hung over them at some Distance: this may be done by fastening one End to a strong Frame of considerable Height at the back of each Bed, and drawing the Mat to the Ground at the Foot: supporting it in the Mid-way in three or four Places by Stakes. Something of this Kind must always be in Readiness for Use: 'tis never wanted except in Case of severe Showers, but if the Beds were left absolutely exposed to them, whether it were while the Seed was shooting, or when the young Plants were up, the Destruction would be very great, the Progress of the Growth would be interrupted in them all, and many would be washed out of the Ground.

With this Caution they will be easily secured from great Showers, and the more gentle will refresh them, and be only beneficial.

When the Plants appear, let it be observed if

Octob. if they rise any where so close as to hurt one another. If that be the Case let them be thinned, and those which are taken up be planted in another Bed, not among these.

Let no Weed rise upon this Bed: let the Plants be constantly watered every Afternoon, and let this be done with a fine nos'd Pot, which has no Cracks or Flaws: the Water should fall from it in the Manner of a very

gentle Shower. Thus let the young Plants stand till they are in a Condition to be removed without Danger. They are to be transplanted only once; therefore let it be done with Care. And as they have been sown thin, they may without Damage stand to take a due Growth first. The right Management of this Removal is of great Importance.

Octob.

CHAP. IV.

Of transplanting the SEEDLINGS.

WHEN the young Plants in the Seed-bed have some Strength, let a new Set of Beds be prepared for them, of twice the Bigness of the first; and let great Care be taken of these, for it is there they are to flower.

Let the Ground be chosen in a like Part of the Seminary, but a little more open to the East, and let the Shape of the Seeds be marked by Lines, and the Ground dug away a full Spade Depth.

Let some Chipings of Stone be strewed over the Bottom, and beat down flat, but lightly with the back of a Spade.

Let the Alleys remain unbroken, and the Space of the Bed be filled deep with another Parcel of Compost. This must not be from the same Heap with the first, but from one of the same general Nature, and more rich.

The Gardener, who has considered the preceding Part of this Work, will very well understand this Distinction: and if he have observed to prepare the several Composts, he will be very ready for the Practice. If the Plant he is raising be one of those which require a light loose Soil, there are several Composts of that Kind; and he should chuse for these Beds, or in Time make for them, one which is of the same general Nature with that first used, though of different Ingredients; and that with the same general Qualities is more fertile.

Let the Beds be made up with this a Spade and half deep; and let the whole, instead of a Slope, be of a rounded Form.

The true Method is to pare away the Sides when the Bottom is cleared, that the Head of the Work may be rounding like a Gravel Walk in a Garden; then the Clippings of Stone are to be scattered equally over that Surface,

so that they will also be of a rounded Form of the general Bottom; and after this the Compost is to be spread regularly, and the whole Bed made a little rounded on the Top.

This done, let it be divided by Lines lengthway and across, and these according to the Bigness of the Plants, farther asunder, or nearer; but for no Kind they should be left thirteen Inches distant; that there may be Room to clear between them.

In the Spots where the Lines cross one another, open Holes, and chuse a favourable Season for the removing the Plants: let it be done in the Evening, and let the Weather be cloudy, and the Wind in the South, or nearly so. All cannot be done in one Evening; but this is the proper Weather, and if the Season vary, the Work must be suspended.

In taking up the Plants, let Care be used not to injure their Roots. Let the second Beds be near the first, that the Fibres may not suffer by the Air in carrying from one to the other, and let no more of the old Mould be taken up with them, than hangs just about the Head of the Root.

Let the Extremities of the Fibres be trimmed off before the Plant is set in its new Place, and let it be fixed upright, and the Mould be carefully gathered round it.

When as many are planted as can be done conveniently in one Evening, let them have moderate Watering; and be open to the Night Air: but an Hour after Sun-rise, draw a Mat or a Canvas at a Distance over them to shade them from the Sun; and let this remain over them till the Time of watering them again in the Evening. In this Manner let all the Plants be got into their new Bed.

CHAP. V.

Of the Management of the PLANTS.

AS we treat here in the general, and have only in View the doubling of Flowers, it is needful to observe, that according to the dif-

ferent Nature of the Plants, they will require more or fewer Repetitions of the same Management while in this second Bed; but it depends

Octob. depends upon the same Principle, the supplying them well with Nourishment, and the changing the Soil.

We will suppose the Plants be of those Kinds which are sown in Spring, take their Growth during the Summer, and flower the succeeding Season. These require three careful Dressings; as we shall now lay down the Rules: and all that is required farther, for those which are longer before they come to flower, is, that they must have the same Care repeated so often each Year. For the Kinds we suppose, which are those sown in the Spring, in order to their flowering the following Summer, this is the Management.

As we let them grow larger in the Seed Bed than those can who sow them too thick, or than those who intend to remove them several Times, a great deal of Care is to be taken of them in the planting out into their second Bed. They must be shaded with the Mats till perfectly rooted, and after that they are to be left to take their remaining Summers Growth without any farther Assistance, than careful Weeding, breaking the Ground at Times between them, and watering according to the Weather.

In this Manner they are to stand the Summer; but in the mean time Preparation must be made for assisting them at those Periods when they are taking their last Growth, and setting for Flower.

Toward the latter End of *September* they must have one Refreshment; and in the succeeding Spring and Summer two more. The Composts for these Services must be prepared now, and they must be all made to vary in some Degree from one another, though all must be of the same general Nature. The longer these Composts lie to mellow the better, therefore it will be right to prepare the three Heaps now, and it may be done in this Manner.

Let a Quantity of Compost be taken from some Heap of a proper Quality; though different in the Ingredients from that used for making the last Bed. Let this be divided into three Parcels; and let a Stick with a Figure be prepared to set upright in each, that the Gardener may know which is which.

With the first Parcel let him mix fine River Mud in the Proportion of one half: that is, let the Heap be composed of equal Parts of the Compost and of the Mud, and marked as we have directed, Number one.

With the second Parcel let him mix Wood-pile Earth in the Proportion of one third Part, and let this be mixed up well, and marked Number two.

With the third Parcel let him mix old Cow Dung in the Quantity of one fourth Part. Let these also be well worked together, and marked Number three.

This should be done early in Summer; there is no Expence in it, and very little Trouble; and the Consequence will be, that all lying in Readiness the Work will be easy; and the Va-

riety of the several Soils will give the Plants the full Advantage of frequent Removals without the Check. They are to be used in the following Manner.

Toward the End of *September* let the Surface of the Beds be par'd away, or drawn off with a Hoe to the Depth of one Inch; observing to work tenderly just about the Stems of the Plants. In the Place of this let the Gardener bring in as much of the Heap numbered *one*, as will raise the Bed half an Inch higher than it was; and, after this, let him gather up a small Quantity round the Stem of each particular Plant. The Quantity will be thus an Inch and half every where else; and two Inches or more about the Stems of the Plants.

This is to remain all Winter. It will by the additional Thickness defend the Roots against the Frost, and it will serve in the Place of a Transplantation, by giving a new Soil about the upper Roots, while the Plants are kept from any Check by the lower, which continue unremoved.

In the Beginning of Spring, when the Plants are about to make their first Effort, toward the Shoot for flowering, take off an Inch Depth or somewhat more of the whole Surface of the Bed; and in the same careful Manner avoid injuring the Roots.

This will take off all the Compost last laid on, for it will by this Time be shrunk within that Compass. In the Place of this spread on as much from the Heap Number *two*, as will raise the Bed half an Inch above the former Level; and from Time to Time, as the Spring advances, water the Ground.

Lastly, when the Buds for flowering are seen upon the Plants, take off the Surface once again, and fill up the Place of it from the Heap Number *three*. This compleats the Dressings.

After this the Surface must be broke lightly with a Hoe once in a Week, and every Day the Plants must be very thoroughly watered in the Morning; for that is the Time when they draw Nourishment most briskly: and again toward Evening. But in all this Watering, Regard must be had to the Temper of the Ground. It must not be wetted like Pap; but as much Water must be given as it will receive, retaining the proper Condition for the Passage and Subsistence of the Roots.

In this Manner they will be brought to flower under all those Advantages Nature takes in the enlarging and doubling of Flowers. There will be some single; and, in Spite of all this Care, some bad amongst them.

These must be taken up; and the same Encouragement given to the others for the following Year.

The first must be marked then for Seed; and this entire Method followed in raising the Plants. The second Offspring will shew the full Success of the Practice; and the Gardener will know there is such an Art as that of raising double Flowers with Certainty.

E D E N :

A

COMPLEAT BODY of GARDENING.

N U M B E R LVII.

For the middle of OCTOBER.

S E C T I O N I.

FLORA, or the PLEASURE-GARDEN.

C H A P. I.

Flowers and Curious Plants now in their Perfection.

I. ALLOBROGIAN HEMEROCELLES.

Octob.
Pl. 57.
Fig. 1.

THE Term *Allobrogian* will acquaint the Gardener what Plant we lay before him in this Place, although under another generical Name.

It is indeed as singular as beautiful; the old Writers have all refer'd it to wrong Genera; and it has perplexed even those of the best Judgment, who have since removed it into others. There is in its Aspect an Alliance and Affinity with several Plants to whose Genus it can by no means be referred; and there are great Differences in its Nature from the other Species of that to which it is now reduced: but the essential Characters, on which Science now founds those Distinctions, connect it regularly with them.

Such is the State of Botany: our Methods shew themselves in these Instances to be purely artificial, but the Difficulty is almost insurmountable which lies in the Way to a natural System.

All who have written, whether of Plants, or Flowers only, of late Time, have named this Ornament of our Gardens. They have in general referred it to the *Phalangiums*, and have distinguished it by various Additions. C. BAUHINE calls it *Phalangium magno flore*; and J. BAUHINE, *Phalangium flore Lillii*: the great-flower'd and Lilly-flower'd Phalangium; the Generality of the rest have named it, from its

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most frequent Place of Growth, the *Allobrogian* Mountains in *Savoy*, the *Allobrogian Phalangium*. DALESCHAMP calls it simply, *Phalangium*, as considering it as the true and original Plant of that Name; and from him others have named it, *Phalangium antiquorum*: Phalangium of the Antients.

LINNÆUS, who found the generical Characters far different from the *Phalangium* Kind, removed it to the *Hemerocallis*, with the Marks of which its Parts perfectly corresponds; and he adds as the specifick Distinction, *Scapo simplici, corollis Hexapetalis, campanulatis*: simple-stalk'd Hemerocallis, with companulated Flowers of six Petals. This perfectly distinguishes it from the common *Hemerocallis*, as indeed does its whole Figure at first Sight.

The Root is composed of numerous, long, thick, and white Strings; hung with small Fibres.

The Leaves are six or thereabouts, long, narrow, hollowed, rising upright, and of a firm Structure; their Colour is a fresh green, they are sharp-pointed; and at the Base, where they are naturally white, though sometimes tinged redish, they embrace the Rudiment of the Stalk, and one another.

The Stalk is round, thick, juicy, upright, and fifteen Inches high; of a pale green, and set with a few slight Films, whose proper Office is to support and defend the Footstalks of the

8 I

Flowers.

Octob. Flowers, but the lowest of them in some Degree resemble little Leaves.

The Flowers crown the Top of the Stalk in a Kind of elegant, short, but thick Spike. They are very large, and of the Lilly Form, and Snow-white Colour; only that three of the Petals are tipped with green: and they have a very delicate Fragrance. Ten or twelve of these Flowers appear frequently at once upon a Plant; and each has its separate short Footstalk, and at the Base of that a Film. There is no Cup; the Body of the Flower is composed of six oblong Petals, which continue separate to the Base, and they are smallest there, wider to the Mouth, where they are expanded; and the upper ones turn a little back at the Ends.

Within the Flower rise six Filaments, long, tubulated, and crowned with golden Buttons: they are equal to the Body of the Flower in Length, they droop a little, and the upper ones are somewhat shorter than the under.

From the Rudiment of the Seed-vessel, which is roundish and furrowed, rises a single Style of the Length and Figure of the Filaments, and crowned with a three-corner'd Head, which turns up a little. When the Seed-vessel ripens it becomes more of the oval Form, and has three Ridges: it is divided within into three Cells, and in each contains numerous rounded Seeds.

The Class of the Plant is seen obviously in the six Filaments; and its Place in that Class by the single Style. It is one of the *Hexandria Monogynia*.

Culture of this *HEMEROCALLIS*.

We have observed the Plant is Native of the Northern Parts of Europe, but it is not confined to those; for it flowers also in great Elegance wild in Italy. The Situation which most favours it, is the Side of a Hill where there is Water near, where the Mould is light and deep, and there is some Shade. All these Advantages, when the English Gardener knows they are required, he can give without much Trouble to a Plant which endures freely the open Air in our Climate.

The great Disadvantage attending Gardening

is, that it is practised by those, who not knowing the History or Nature of the Plants, cannot give those Assistances to their Growth so easily in the Power of such as are conscious they are required.

On this Principle let the present Plant be cultivated. Let a small Bed be allowed for it in the Flower Garden; and let this be in a Spot that has natural Moisture, a little Shade, and some Declivity; into this Place let there be dug as much River Mud and Meadow Earth as there is of the Garden Soil; and with these a little rotted Cow Dung: thus the Soil will be enriched without Heat, and the Place corresponding with it in suiting the Nature of the Plant, there will be all possible Advantage.

The Plant may be either increased by parting the Root, or raised from Seed. If the Method by parting the Roots be chosen, the Season for it is toward the End of September; and no more Trouble is required than to take them off from the old Root with a good Head; and, levelling the Bed made for them, to plant them at a Foot and a half Distance with the Head upright, and cover them two Inches with the Mould. They will in this Manner flower the succeeding Summer.

The Method by Seeds is slow, and there is no Expectation of Variety in the Flowers: it is scarce worth while to be at the Trouble; but those who chuse it will have numerous and elegant Plants.

The Time of sowing is the End of Autumn; and the Seedlings are to be treated with great Care, removing them when the Leaves fade, the first Season, out of the Seed-bed, and planting them at a Foot Distance; and then preserving them by sifting on a slight Covering of Mould, Spring and Autumn; and keeping the Bed carefully weeded.

Whichever Way the Plants are raised, they must be kept in Perfection by changing the Mould of their Bed every Year. The Time of doing this is at Autumn, when the Stalks and Leaves are perfectly decayed. The Roots must at this Season be taken up and reduced to a due Size; and planted again immediately in the fresh Mould, covering them at least as deep as at the first planting.

2. DOUBLE RED CAMPION.

Pl. 57.
Fig. 2.

This Garden Flower we raise from a common Weed: for in the single State, the red *Campion* paints our Hedges in the early Part of Summer almost universally. Nature first gave the Hint for ennobling the Flower, but Art only can raise it to the full Bigness wherein we represent it in the annex'd Plate. Where the Ditch Side on which it grows is rich and well watered, we see the Flower not unfrequently double; but always small. The full Richness of made Ground and the repeated Labours of the Gardener are required to bring it

to this rosy Fullness.

In the double State the old Authors call it, *Lychnis multiplex*; and *Lychnis Flore pleno*; in the more usual State, with single Flowers, they have all described it: they call it *Lychnis sylvestris flore rubro*, and *Flore rubello*, and *Ocymoides purpureum*. C. BAUHINE calls it, *Lychnis sylvestris sive aquatica purpurea simplex*: the simple flower'd red, wild or Water Lychnis: nor is the Name Water, given it by this Author, amiss, for its natural Place of Growth is under Hedges, upon the Banks of those small Ditches

Octob. Ditches which are cut as a Part of the Fence : and it never thrives so well as when there is Water in them. CLUSIUS supposes it the *Melandrium* of Pliny, and not without Foundation.

LINNÆUS, who has separated under several different generical Names the Plants called by others *Lychnis*, retains that Name for a certain Number of them ; and this is one : he adds as the Distinction of the Species, a very singular Character, *Floribus dioicis* : *Lychnis* with male and female Flowers on separate Plants. This is indeed a classical rather than specifick Character ; and should, in the Strictness of Method, remove the Plant far from all the others of its Kindred : but LINNÆUS on these Occasions, makes his System subservient to Nature ; and has kept them together according to her Laws, though in Contradiction to his own.

The Root is long, thick, white, and hung with many Fibres.

The Leaves rise in vast Tufts, and are oblong and of a pale green, broad, soft to the Touch, and variously disposed.

The Stalks are irregularly upright, branched, weak, and two Foot high. Their Colour is a pale green, and they are covered with a light greyish Hairyness. The Joints swell a little, and are often stained with purple.

The Leaves stand in Pairs ; they are large, broad, oblong, soft to the Touch, and of the same pale green with the Stalk.

The Flowers are very large and specious : they are composed of a Multitude of oblong Petals irregularly jagged at the Edges, and their Colour is a strong and fine Crimson.

The Student knows we are to refer him for the Characters of the Plant to the single State of the Flower ; in this he will find it composed of five Petals, and placed in an inflated Cup.

This Cup is formed of one Piece, rounded, cut into five Parts at the End, and permanent.

The Petals of the Flower have narrow Bases, of the Length of the Cup, which are edged by Membranes. The Filaments are ten, five are somewhat shorter than the others ; and they have incumbent Buttons.

The Rudiment of the Seed-vessel is oval, and there rise from it five long Styles crowned with simple Heads.

The Seed-vessel is oblong, and remains defended by the Cup ; it is composed of five Valves, but has only a single Cell, and is full of roundish Seeds.

Culture of this CAMPION.

The Gardener needs not be told, that little of his Care is needed to preserve in the Borders a Plant which takes its Chance among Hedge

Weeds, and flowers there in great Perfection : Octob. but even in this plain Instance the Guidance of Nature is neglected, and 'tis therefore we see it poor and imperfect.

We have lamented that those concerned in the practical Part of Gardening, generally want Opportunities of knowing the History and natural Growth of those Plants they are to cultivate, because the Books which should convey that Knowledge, are in Languages unknown to them : but here 'tis Want of Observation only, for the Plant is before them.

One wonders to see Men take a Plant from a damp shady Place, and set it in a dry and open Border ; but as often as the Occasion returns, we have the Cause to wonder.

Let the Gardener remedy it in this familiar Instance. He is surpris'd at the Bigness in which we represent the Flowers in this Figure, and because he has only seen the Plant in ill-chosen Situations, where they reach but half their natural Size, and very little of their proper Lustre ; he supposes their true Form exaggerated. Let him give the Plant proper Advantage, and he will find it all in Nature ; if he propagate it by parting the Root, let him in Autumn choose the damp Side of a Clump of flowering Shrubs ; and with no more Care he shall see the Flowers next Summer vastly improved in Bigness and in Colour ; and such Soils and such Situation let him for the future give to this and to all other Plants of the same Origin.

This Method of parting the Roots is the common and familiar Way of propagating the Plant, they encrease abundantly ; and they should be parted in Autumn, but not too small. After this they should every Autumn be taken out of the Ground, clean'd, and reduced to a due Size ; and planted again immediately either in another Place with the same Advantages as the first, or in the same Spot with new Mould.

Thus they will flower in Perfection : but the Gardener knows more is to be expected if he will be at the Pains to raise them from the Seed. The Method of doing this we need not here lay down at large ; having given it so fully already. He must observe that no Seed is to be expected from these double Flowers : it must be collected from the single Kind wild in the Hedges.

This must be sown in Autumn under the Advantages we have directed for other Seeds intended for raising double Flowers ; and the Result will be, that the Gardener will find, among many of an inferior Order, several double and large ones ; crimson, pale red, white, and variegated. The Plant in this View is very well worth Culture, and is capable of great Improvement.

3. ARABIAN ORNITHOGALIUM.

Pl. 57: The *Ornithogaliums* of every Kind have been at
Fig. 3. all Times received and valued in our Gardens ;

but this most of all, and most worthily ; there is a Dignity and Elegance about it which none of the others

Octob. others have, and indeed scarce any other Plant.

The Writers all have named it; and in general, under the same generical Term. CLUSIUS calls it *Ornithogalum Arabium*, and from him most others have taken it. Some call it, *Arabicum majus*, the greater Arabian Kind. C. BAUHINE *Ornithogalum umbellatum maximum*: the greatest umbellated Ornithogalum; and J. BAUHINE, *Lilium Alexandricum, sive Ornithogalum magnum Syriacum*: the Alexandrian Lilly or great Syrian Ornithogalum.

LINNÆUS, more correct than all, adds to the generical Term, which he preserves unaltered, *Floribus corymbosis pedunculis scapo humilioribus, Filamentis emarginatis*: Corymbose Ornithogalum, with the Side Footstalks shorter than the Stalk, and with emarginated Filaments.

The Root is large and round, a regular Bulb composed of numerous Coats, broad at the Base, and there furnished with many Fibres. The Colour whitish, and the Juice thick. The Leaves are numerous, long, and slender; they are broadest at the Base, smaller to the Point, hollowed, and of fresh green; ten or more of these rise together, and display themselves in various Directions.

The Stalk is round, upright, and fourteen Inches high, not very thick, of a fresh green Colour, and often whitish toward the Base.

The Flowers crown the Stalk in a great broad Head, and they are extremely elegant; they are large, and their Colour is a perfect white; and their Smell very singular: this is principally perceived in an Evening.

There are no Leaves upon the Stalk, but a few Fibres, which defend the Footstalks of the Flowers when they first appear; and remain with them afterwards one to each.

The whole Head of Flowers is of a Form approaching to round; but the Flowers rising from the Summit of the Stalk, though they have the shortest Footstalks, are highest in the Cluster: the Footstalks of tho' others the longer, not exceeding them in Height.

The Student will find something very singular in the internal Parts of this Flower; but the Clafs will be obvious at first Sight.

The Flowers rise naked from the Summits of the Footstalks, and each is composed of six broad Petals expanded, and specious; in the Centre stand six Filaments, three of these are emarginated, the other three plain; and the Burtons large. The Rudiment of the Seed-vessel is angulated, and from this rises the Style, which is single, smaller toward the Top, and permanent; crowned with an obtuse Head. The Seed-vessel, when ripe, has three Ridges, and is composed of three Valves, and divided within into three Cells, in each of which are numerous roundish Seeds with a columnar Receptacle.

The different Structure of the Filaments is a very singular Incident in this Plant; but their Number, which is six, refers it plainly to the *Hexandria*; and the single Style to the *Monogynia*, the sixth Clafs, and its first Section.

Octob. *The Culture of this ORNITHOGALUM.*

It is a Native of *Egypt*, and other Parts of the *East*; and flowers abundantly in the deep black Soils, about the Edges of Springs. With us the Root will live in the common Borders, and produces its Leaves, and multiply by Off-sets; but very rarely flower. 'Tis not a Wonder that a Native of a Climate so different from, and so much warmer than our own, should not readily flower with us in this rude Way of Culture; but there is so much Beauty in the Plant; that it should be allowed all Advantages.

The Roots are brought over annually by the *Italians*, and they should be treated as others from such Climates: when they are receiv'd, they should be cleaned; the dead Skins peeled off, the decayed Parts cleared away, and the Roots wiped softly with a Cloth. After this let them be laid in a cool Place in the open Air three Days, and then planted in the following Manner. Let some fresh black Mould, from under the Turf in a Meadow, be mixed with equal Parts of rotted Cow Dung and Pond Mud; let some loose Pieces of Gravel be laid in the Bottom of a Pot, and this Compost poured in to fill it half up. Let the Root be set upright upon this, and more of the Mould pour'd in till it is covered half an Inch. Refresh and settle the Mould by a very gentle Watering; and then set the Pot in a warm and shaded Place.

Once in four Days give a very little Water. It is necessary to do this, but nothing requires so much Caution: if the Mould be suffered to become too dry, the Root will not shoot its Fibres; if it be made too wet it will rot. The Caution of the Gravel at the Bottom of the Pot was directed to preserve the free Passage of the Water; and the Way to know whether the Temper of the Mould be right, is to open it a little Way at the Edge of the Pot to examine.

If this Practice be followed during the Beginning of Summer, there will be a Shoot seen toward the middle of *July*. This must be encouraged by more Watering, and when the Evenings begin to be cool, the Plant must be removed into a warmer and opener Place; but still sheltered from cold Winds. It will be best to set it among the Greenhouse Kinds.

Toward the End of *September* let it be removed into the Stove, and set in the Bark Bed; it must be watered at Times and treated as the rest; and it will flower in its full Beauty.

After this, every Spring and Autumn the Mould must be taken off from the Surface, and fresh put in the Places; and once in two Years the Root must be taken up, the Off-sets cleared away, and planted in separate Pots; and the old Roots in fresh Quantities of the same Mould as at first. Thus the Plant will flower in all its Perfection; and this is its rational Treatment.

O&ob.

O&ob.

4. ILLYRIAN PANCRA TIUM.

Pl. 57.
Fig. 4.

The Sense of Mankind of this Plant's Elegance has given it a long Time a Place in Gardens, where its delicate Fragrance, Singularity, Beauty, and easy Culture, will join to preserve it in Reputation. A Flower, so long and so well known to the Gardener, could not escape the Attention of botanical Writers: they have all celebrated it, but under various Names. C. BAUHINE calls it *Narcissus Illyricus Liliaceus*: the liliaceous Daffodill of Slavonia. The more common Writers, *Narcissus tertius Mathioli*: the third Sea Narcissus of Mathioli. BESLER calls it, *Lilio Narcissus Hemerocallidis facie*: Lilionarcissus with the Aspect of the Hemerocallis; and J. BAUHINE, by a long Name which very well shews his vague Notion of its Characters, *Pancratii Monspeliani, vel Hemerocallidis valentinæ facie Lilionarcissus, vel Narcissus tertius Mathioli*: a Lilionarcissus, with the Appearance of the Pancratium of Montpellier, the Hemerocallis of Valentia; or the third Daffodill of Mathioli.

When such Names were received, did not the Science want LINNÆUS? that Author, having distinguished the bulbous Plants by Characters which obviated all this Confusion of naming them from their Likeness to one another, refers this to the *Pancratiums*, several Species of which we have had Occasion to describe before; and he distinguishes this particular Plant by the Addition, *Spatha multiflora, foliis ensiformibus, Staminibus nectario longioribus*: Sword-leaved Pancratium with cluster'd Flowers and Filaments longer than the Nectarium.

The Root is bulbous, vety large, of an oval Form, and hung from the Base, with many long, large, and durable Fibres. The outer Coats are blackish, but it is white, and full of Juice within.

The Leaves are six or eight in Number, broad, plain, and edged, not very long; of a firm Substance, and of a grey-green Colour.

The Stalk is round, thick, and juicy, naked, a Foot high, and of a pale green; whitish toward the Ground.

On its Top stand the Flowers, all rising from one common Point, and at the first surrounded or enclosed with a common Scabbard. They are from six to ten or twelve in Number, or with very good Culture more: they are large, white, wide expanded, and extremely fragrant: the Scent is in the highest Degree pleasant; but not heavy or overpowering.

The Scabbard from which they burst, is oblong, obtuse, flatted, and large; it bursts on the plain Side, and soon after fades.

The Flower consists of six Petals, and a conspicuous Nectarium. This is formed of one Leaf, white as the rest of the Flower, and cut at the Rim into twelve expanded Segments; smaller and hollow toward the Base. The six Petals are fixed to the Outside of this tubular Part near the Base: they are oblong, and broadest toward the middle.

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The Filaments are six; they rise from the Nectarium; they exceed it in Length, and they have oblong incumbent Buttons.

The Style is single, and crowned with an obtuse Head. It rises from a rounded Rudiment placed under the Receptacle of the Flower, and marked with three obtuse Ridges; this afterwards ripens into a three corner'd Seed-vessel form'd of three Valves, divided within into three Cells, and containing in each many round Seeds, with a columnar Receptacle.

The six Filaments and single Style shew the Plant one of the *Hexandria Monogynia*.

Culture of this PANCRA TIUM.

It is a Native of the warmer Parts of Europe, and thrives best on the Sides of Hills that lie near the Sea.

The Influence of the Sea Water reaches farther than any but those who study Botany, are aware.

We find in England a Number of Plants, beside those which never live any where but upon the Shores, which very well deserve to be called maritime, for they flourish five or six Miles from the Sea; but are not found in the midland Places. Therefore this bulbous Flower, though found on the Mountains of Sardinia, as RAY tells us, is always to be understood by the Gardener as a Maritime Plant, and treated accordingly. We have had Occasion in former Instances to mention the Particularity that is to be observed in the Treatment of those Plants which Nature has raised near the Sea; it is a Thing quite overlooked in the Practice of Gardening; and the Consequence is, that few of those Plants, some of which are the finest we know, flower in their full Beauty.

As this is a Native of Europe, it will very well bear the Seasons with us in open Ground, only it should have a good Spot chosen; and a Soil appropriated to its Nature. In this the Gardener may very happily propagate it by Off-sets; for we could, with an ill Grace, advise him to the Method by Seeds, if every Attempt in that Way were to be as tedious as our faithful PARKINSON's; who was fourteen Years in bringing a Seedling Plant of it to flower. This Method however, tho' we name the Discouragement, we do not mean to discommend; the Art of Gardening is better known than in his Time, and with the Circumstance of a well suited Soil, the Labour may reap its Reward sooner. It will be a Service to the Cause, if some, who raise many of the bulbous Kinds from Seed, will give this a Trial among them.

The Compost should be prepared thus: mix a Barrow of dry and not over rich Pasture Mould, with a Bushel of old Cow Dung, three Pecks of Woodpile Earth, and two of Sea Sand wet with the natural Water; or, if the Sea be not near, use in the Place of this the same Quantity of River Sand, or of coarse Pit Sand washed clean,

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and

Octob. and three Quarts of Brine; let this be thrown in a Heap in *October*, and lie till the succeeding Year, often turning it, and suffering no Weed to exhaust it.

When the flowering Time of this Plant is over, and the Leaves are decayed, make up a Bed in a chosen Part of the Garden for planting the Off-sets, to be separated from the Roots. Let the Place be open to the Morning Sun, and sheltered from cold Winds: let the Mould be dug out a Spade's Depth, and dug up well for a full Spade underneath, throw in the Compost to raise the Bed three Inches above the former Level; and dividing the Surface by Lines drawn both Ways into Squares eighteen Inches in Diameter, open a Hole in every one for one Off-set. Let the Opening be large, three Inches deep, and the Bottom levelled.

Take up the old Roots in a moist Evening, and separate the Off-sets. Trim the Ends of their Fibres, and plant one upright in each Hole; draw the Mould about them, and let them be covered an Inch deep.

There will require no more Care besides weeding and watering till they flower.

After this let the Surface of Mould be every Octob. Season drawn off for two Inches Depth between the Plants, and a fresh Parcel from another Heap of the same Compost prepared for that Purpose be spread in its Place, but never let them be taken up. We have observed their Fibres are durable, not temporary as in the common Bulbs; and nothing but this Care of leaving the Roots in the Bed can make them flower with due Strength.

The Seedlings, which we propose should be raised in the mean Time, should have the same Compost; and when they have one Year's Growth they must be planted in a separate Bed at a Foot Distance never to be removed again: this Bed, being of the proper Compost, and exposed to the Morning Sun, will nourish them well; and it will be seen whether they do not flower in better Time than the Account of PARKINSON would lead us to expect. The flowering of many Plants may be promoted by good, and delayed by erroneous Management. The transplanting of bulbous Seedlings is understood an Article of good Gardening, and this Plant was not at all Times a known Exception.

5. DARK FLOWERED WHITE HELLEBORE.

Pl. 57. The strong Ribs in the Leaf of this Plant recommends it to Notice when out of the flowering Season; and at that more favourable Time the Number and Disposition of the Flowers. It very well deserves a Place in Gardens as an Object of singular Variety.

The old Writers knew it; and they have in general called it by the Name, white *Hellebore*, with an Addition from the Colour of the Flower. C. BAUHINE calls it *Helleborus albus flore atro rubente*: white Hellebore with a blackish red Flower. Others have added the Term *Præcox*, early, but this is uncertain; for the fine large flower'd Kind here represented, is later than the common.

LINNÆUS, discarding all compound generical Names, calls it *Veratrum*, and adds as the Distinction of the present Species, *Racemo composito corollis patentissimis*: *Veratrum* with patent Flowers in a compound Cluster.

The Root is composed of numerous, thick, long Fibres, connected to a small Head.

The Stalk is round, upright, firm, and near a Yard high; naturally of a pale green, but often stained with a deep Purple toward the Ground.

The Leaves are placed alternately, and they have no Footstalks, but in some Measure surround the Stem at their Bases. They are very large; long, of considerable Breadth, and marked with strong and high Ribs, all running lengthways; the Surface of the Leaf is rendered very uneven by these, and the Aspect is singular.

The Colour is of a pale green, often inclining toward yellowish; and the Substance firm and harsh.

The Flowers crown the Stalk in a vast Cluster, reaching a third Part of its Length; they are ar-

ranged on long common Footstalks with short hairy ones for every Flower; and their Colour is an extremely deep purple, tending to black. Singly they are not large, but the vast Number of them renders the Plant conspicuous; many hundreds being often open at a Time.

Each Flower is composed of six Petals, and is placed naked upon the Footstalk without a Cup. RAY considered these as Leaves of a Cup, not Petals of a Flower; and in the common white *Hellebore*, whose Flower is greenish, there is much of that Appearance. It was thence he classed the Plant among those with imperfect Flowers. The Petals are oblong, lanceolate, and permanent.

In the Centre stand six Filaments; they are short, and are crowned with square Buttons. Thus far they are all alike; but upon more Examination, there will be found in some, beside these Filaments, three oblong Rudiments of Fruit, crowned with very short Styles, with open Heads; in others only a faint Representation of a Rudiment without Styles or Heads. In the first Kind the three Rudiments ripen into three Capsules of an oblong compressed Form, each containing several flattened membranous Seeds; in the others the Rudiment fades and comes to nothing.

From this Distinction of the Flowers the Class of the Plant is known, those with compleat Rudiments, succeeded by Seed-vessels, are hermaphrodite Flowers; the others, with the slight and inconsiderable Appearances which fade without Fruit, are male Flowers; and as these two Kinds grow on the same Plant, the Class is that of the *Polygamia Monogynia*.

Octob.

Culture of this HELLEBORE.

It is a Native of *Hungary*, and many other of the Northern Parts of *Europe*, where it succeeds best in a loose Soil, and open Situation; on the Sides of Hills, and Borders of Fields. There can be no Difficulty in propagating such a Plant in Gardens here: it lives in the common Borders, in any Situation; and flowers with tolerable Care more beautifully than in its native Country.

The Gardener has his Choice, to propagate it by Seeds, or by parting the Roots: the latter is the ready Way, and succeeds very well; but the other is the Method for those who value themselves upon having fine Plants: we advise the Gardener to use both. For the present Stock let him obtain some parted Roots, but for a Succession of fine growing Plants, let him have the necessary Patience for the Growth from Seed.

The Season for parting the Roots is not Autumn, as for the Generality of the fibrous Kinds, but Spring. The Beginning of *March* is the most successful Time: and they will require to be divided once in three Years.

The Soil should be a Mixture of fresh Pasture

Earth and rich Garden Mould in equal Quantities; a Bed should be made of this, and dug two Spades deep, and perfectly levelled. It should be in a Part of the Garden open to the Morning Sun; and not shaded by Trees: the parted Roots must be planted at eighteen Inches Distance; and watered and weeded in the common Way. Every Autumn and Spring the Surface of the Mould must be well broke between the Plants; and every third Year, when they are taken up for parting, the whole Soil must be dug out, and fresh put in its Place; or the Plants must be put in another Border.

The Seeds must be sowed from the stoutest and most flourishing Plants; and sown in Autumn. The following Spring they must be often watered, and the Bed kept clear from Weeds; and where they have risen too close, they must be thinned. The succeeding Spring they must be planted out at six Inches Distance in another Bed; and the Spring succeeding that into the Garden, where they will flower according to the various Accidents of their Growth that or the succeeding Summer. These will be the finest Plants, and though Time is required, the Trouble of raising them is trifling.

Octob.

6. GREEN BACK'D ORNITHOGALUM.

Pl. 57.
Fig. 6.

It must be indeed an elegant Plant of the *Ornithogalum* Kind, that could appear with Advantage after the *Arabian* we have just named: this cannot be said to dispute the Preeminence with that; but 'tis notwithstanding a very elegant Plant: and, as it is also of easy Culture, it should be admitted into all Gardens where Variety is studied.

The old Writers were acquainted with it, and they have universally called it *Ornithogalum*. They have added their Sense of its Distinction from the other Kinds, though in Terms which confessed they scarce knew what the Difference was.

It is indeed a Variety of the common Kind; rising from its Seed under the various Accidents of Growth, not an absolutely distinct Species. CLUSIUS calls it *Ornithogalum vulgare aliud*: another Kind of common *Ornithogalum*. C. BAUHINE distinguishes it by the Term *Latifolium*, broad leav'd; but this is vague and uncertain. The Leaves, though commonly broader than those of the common *Ornithogalum*, from which he means to distinguish it by that Epithet; yet being too uncertain in that Particular for the founding a proper Character, the entire green of the back of the Flower is the obvious Distinction: by this the Gardener will always know it; this is its principal Recommendation to his Notice; and he is to be informed that LINNÆUS, who has carefully distinguished Varieties from Species, does not allow this of the latter Kind: he is to refer it therefore to the common *Ornithogalum*, which that Author distinguishes by the Addition, *Floribus corymbosis, pedunculis scapo altiori-*

bis, filamentis emarginatis: Corymbose flower'd *Ornithogalum*, with the Footstalks taller than the main Stem, and with emarginated Filaments.

The Root is a large Bulb, white, crowded with Off-sets, and hung with many Fibres.

The Leaves are numerous, very long, moderately broad, and of a fine strong green: they rise considerably above the Top of the Stalk; and they have not that white Rib in the middle which distinguishes the Leaves of the common Kind.

The Stalk is green, round, naked, and eight Inches high; white toward the Ground, and elsewhere of a pale green.

At its Top stands an elegant Cluster or round Head of Flowers: they all rise from one Point, and spread themselves into a Kind of Umbell. Each has its separate long Footstalk; and when the full Number is blown, the Tuft is very elegant.

The Flowers are large, and on the inside of a snowy white; the whole Back is green; and as the Footstalks move with the Wind, this green Part is often turned up to the Sight, and adds to the general Beauty.

The Gardener recollects those in the Flower of the common *Ornithogalum*: there runs all along the back of each Petal, in the middle, a green Streak; this, in the present Flower, does not keep within those natural Limits, but spreads itself over the whole Petal.

The Flower has no Cup; it is composed of six oblong, moderately broad Petals, and has in the Centre six Filaments, three of which are nip'd, the

Octob. the other plain, all broad at the Base; and crowned with roundish Buttons.

The Style is single, it rises from an angulated Rudiment, and is terminated by an obtuse Head.

The Seed-vessel is roundish, angulated, and formed of three Valves; it contains three Cells, and in each of these are numerous rounded Seeds with a columnar Receptacle.

The six Filaments and single Style shew very plainly the Class and Place of the Plant; they declare it one of the *Hexandria Monogynia*.

Culture of this ORNITHOGALUM.

We have observed that this elegant Plant is only a Variety of the common Kind; the Gardener therefore is to raise it by large sowings of the Seed of that Plant, or to propagate and encrease it by Off-sets, which it produces in Abundance: the Method by Seed is very precarious, for out of a thousand Plants there sometimes will not perhaps be one of the true Kind: the Method to attempt it with most Prospect of Success is, to sow the Seed from some Plant, which has the green Rib at the back of the Petals broader than usual; and the Leaves with the faintest Stripe of white. From the first sowing of the Seeds of the com-

mon Kind there will be such Plants, and the regular Expectation is, that this will be obtained from the Seeds of such Plants in a second Succession.

There is no particular Care required for sowing the Seeds. A Spot in the Seminary, open to the South East, will raise them in the open Ground, and they must be removed the second Year into a Bed at five Inches Distance.

The second Sowing must be treated as the first; and if no Plants of the true Kind appear from this, the Seed of those which come nearest to it are to be sown again.

When the true Plant is once obtained, the Method of propagating it by Off-sets is very familiar: it lives freely in the common Borders; and once in two Years the Roots may be taken up to remove the Off-sets. The Season for this is immediately upon the Decay of the Leaves after flowering; and both the old Roots and the Off-sets must then be allowed a fresh Soil.

The Off-sets will flower the succeeding Season; and after this are to be treated as the old Roots, taking them up every other Year to remove their Off-sets; and in those Years wherein they are not taken up, the Surface of the Bed should be pared off at the same Season, and supplied with fresh Mould.



S E C T I O N II.

Of the Propagation of Trees and Plants from all their P A R T S.

THE Spirit of Curiosity is so far raised in many who have not Opportunities or Attention for the making themselves Masters of the Science of Botany, that the raising exotick Plants and Trees is become a very profitable Employment.

The Purchasers for the more rare Kinds are more than can be supply'd; and the Nurseryman wishes nothing so much as the Secret of a larger Multiplication.

The Method by Seed is slow, that by Layers is limited in Point of Number; it also requires much Time: the Method by Cuttings is the most ready, but that does not well succeed in all the Kinds: there is also the farther Disadvantage in the Way of raising from Seed, that it ripens imperfectly in many Kinds with us; and often what we obtain with much Difficulty from abroad, is either gathered unripe, or injured in the bringing over.

These Considerations join, to shew that a more universal Manner of propagating them would be of great Advantage to the Dealer, as well as Satisfaction to the private Gentleman: and this is what we propose to treat of in the present Section.

The Honour of the Discovery, if the Success shall shew it merits any, will be due to a wild and fantastick Writer, *Agricola* of *Ratisbon*, from whose irregular and strange Work upon this Subject, we have here thrown together for the Use of the *English* Gardener, what solid Knowledge it contains, and what is supported by Expe-

rience. The Practice is too new in *England* for accumulated Illustration; but what we have now under Trial with a Prospect of Success, we lay down to the candid Examination of the Publick; and desire those who have Opportunities to make the same fair Experiments.

The Principle on which this Author proceeds is, that in general every Part of a Plant contains the Rudiments of an entire Plant of the same Kind. What LINNÆUS has since said, that the Trunk and Root differ little, otherwise than as one is above and the other under the Ground, this Author had long before asserted; and he alledges that every Part of a Plant or Tree has the same Analogy with the rest: consequently, that as there are in every Part, the Rudiments of all the rest; and a proper Management only is required to bring them forth; that every Part may equally be the Source of a compleat Plant. That the Branches will form Trees because they want only Roots whose Rudiments are contained in them; that Parts of the Roots will as easily be raised to perfect Trees, because the Rudiments of Trunks, Branches, Leaves, and all the rest are in them; and in the same Manner, that every Leaf of a Tree may be made to grow up into a perfect Tree. Upon the same Principle he asserts, that in the Fibres of the Leaves, as well as in the Branches and their Shoots, there are these Rudiments of all the



Allobrogian Hemerocallis



Double red Samolus



Illyrian Pancratium



Arabian Ornithogalum



Dark flower'd White Hellebore



Green back'd Ornithogalum

Octob. the other Parts; and declares from his Experience on repeated Trials, that a Leaf, being properly planted, will strike Roots from the Base; and that the filmy Parts decaying, the Ribs will remain as Branches, encreasing in Length and Bigness, and produce every other Part.

The Reader will find we carefully distinguish between what is supported by his Assertion, and what we have confirmed by Trials: there is great Appearance that some Things not true, are affirmed by him among others of better Credit; but the Process is rational, and the Experiments are easy. The Advantage is very great if it succeeds, for though Seeds are precarious, Layers necessarily but few, and even Cuttings come under a limited Number; if small Pieces

of the Roots and Branches can be made in a moderate Time to rise into good Plants; there is no Tree that may not be multiplied in any Degree the Possessor chuses.

That more may be done in this Way than those unacquainted with the Secrets of Vegetation could imagine, we are certain; tho' perhaps not all the Author proposes: for he has written partly from Imagination, partly from Experience. Of this the practical Gardener, who has the Advantages of Bark Beds and a Stove, may be assured, that if in some Instances he cannot effect all that Author proposed, he will in others be able to do more, because he wanted those great Articles, nor was the Art of Gardening so well known.

Octob.

CHAP. I.

Of Multiplication of Trees by the ROOT.

UPON the Principle that the Root of a Tree contains in every Part the Rudiments of the whole, the Propagation and Encrease of the Tree is to be attempted by larger or smaller Pieces of it committed to the Ground. The Danger is, that the Root should rot before the Principle of Vegetation acts: to prevent this the wounded Parts are to be covered with a Kind of Cement, that will adhere to them firmly in all Parts, and keep out Moisture. Upon this Principle the Expectation of Success is founded. The Moisture of the Earth will cause those Rudiments to shoot: the Damage the same Moisture would cause by settling upon the wounded Parts, is taken off by the dressing with Cement; and whether larger or smaller Pieces of Roots be planted, they will thus be secured, and will furnish one or more perfect Plants, according to their Bigness.

The Cement is thus prepared. Put into an

earthen Pot four Pounds of black Pitch, one Pound of Turpentine, and two Ounces of powdered Aloes; set this over a small Fire in the open Air, and when it has been some time melted, set it on Fire, it will flame up violently; but on covering the Pot close, it will immediately go out. For this Purpose the earthen Pot should be one of those which has a Cover; and this Cover being put on, a coarse Cloath should be thrown over it to make it shut the closer.

When it is extinguished, let it melt again gently some Minutes, then fire it again, and cover as before. Repeat this three Times, then put in a Quarter of a Pound of yellow Wax, and melt all over again: then set it by for Use.

This the Inventor calls Mummy; he gives Receipts for several Kinds fitted to various Purposes, but this will answer for them all. The Cement being ready, make the Experiment in the following Manner.

1. *Of propagating by large Parts of the ROOT.*

Open the Earth about the Stem of a flourishing Tree in the Beginning of April, and cut off one of the large horizontal Roots of an Inch and half or more in Diameter; follow its Course in the Ground, and open the Way with a Pick-Ax, that it may be taken up with as little Injury as possible. Cut off the Side Shoots, and make the wounded Part perfectly smooth: in the same Manner smooth the great End: then wipe the several Wounds very dry, one after another, and cover them well with the Cement. It must be melted so thin as to spread easily, but it must not be too hot.

Nº 57.

When the Wounds are all secured, open a Trench in a Border of fine Mould, that will hold the Root laid along horizontally. Let the Trench be so deep as to contain the Root entire, and allow for covering it an Inch, without raising the Earth above the Level of the Bed.

Draw the Mould carefully about it, and cover it well: press down the Earth carefully and firmly, as it is drawn in, that the Root may be close covered in every Part, for this will promote the shooting of the new Plants; and at the same Time prevent the Mischiefs that might arise from too much Wet.

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Octob. The Root will, after some Weeks, crack in the Rind in several Places, and there will appear from each a Shoot for a new Tree, and opposite to it, or near it, roots.

In six Weeks from the laying, the Plants will be a Foot above the Ground; and a Fort-night after this they may be separated and removed. For this Purpose the Earth must be opened all along the Place where the Root lies, to lay bare the Surface; it must be sawn through into as many Pieces as there are good Plants, the two Ends of each Piece must be smoothed and covered with the Cement, the Ex-

Octob. tremities of the Fibres or new Roots taken off with a Pair of Scissars, and the Plant set in good Mould. The whole Set may be thus removed into a Nursery Bed, and treated in the same Manner as Cuttings when first removed; and they will soon grow up to fine Trees.

The Use of this Method is obvious. A Tree may spare a single Branch of its Root without Damage; and there may be a Number of new ones produced from it; either instead of doing that by Layers or Cuttings, or for a greater Encrease at the same Time.

2. *Of Propagation by small Pieces of the ROOT.*

Take off a small horizontal Root of any Tree that is to be encreased; cut it into a Number of Pieces of three Inches Length each; smooth both Ends of these Pieces; and wiping them very dry, cover them with the Cement melted, just so much as to make it spread easily over the Surface.

Dig up a Piece of rich mellow Mould in a shady Situation, draw Lines upon it at five Inches Distance lengthway, and across at six Inches Distance; and in the Centre of every Square open a small Hole, plant a Piece of the Root in each

Hole, press the Mould very close about it; and thus set all the others.

They will each of them send out one or more Shoots, and several Roots: the best Shoots must be preserved, the others taken off; and after about six Weeks Growth they must all be taken up, and planted in a Nursery Bed in the same Manner as other young Trees, whether raised from Seed, from Cuttings, Layers, or whatever Method.

This is another Method of easy and encreased Propagation; for a Tree of tolerable Strength will spare such a Root without Damage.

C H A P. II.

Of raising a Tree from a LEAF.

THE Hypothesis of this Author, that every Part of a Tree contains the whole in its Rudiments, naturally extends the Subject of Propagation to all the Parts. The Method by Cuttings appeared strange when LAUREMBERG proposed it; but Experience has shewn how perfectly he was in the right; the extending it to the Leaves is the Thought of AGRICOLA, and if all he has asserted in this Case cannot be done, yet a great deal may. Dr. PARSONS, some Time since, ingeniously illustrated the Production of the *Polype* from Pieces of the Animal, by the Example of a Cutting of the Willow; and we may now call back the Subject, illustrating by that strange Animal the universal Propagation of Vegetables from any of their solid Parts.

For this Trial by the Leaves, it will be proper to select some Kind that is large and of a firm Texture in the Ribs, for Instance the Laurel. To give this a fair Trial proceed thus: chuse a dozen of fine, perfect, and sound Leaves of Laurel,

take them carefully off from the Stalks, and take no Bud with them. With a sharp Knife smooth the End where they were pull'd off from the Tree; and wiping it perfectly dry, cover the whole Wound perfectly with the Cement.

Open a Trench two Inches and a half deep in a shady Border, and let the Mould be fine. Lay in these Leaves so deep, that two thirds of each may be covered with the Mould. Press it every Way close about the Leaf, and give the Border, when they are all in, a gentle Watering. Shade them for some Days, as in the planting of tender Cuttings, and afterwards defend the Ground by a Piece of Hawthorn, or some other secure Method; for the Operation of Nature is slow in this Case.

By Degrees the Leaf will moulder away, all but the principal Ribs; but these will shoot out Roots in that Part which is under the Ground, and will run up into Branches above.

Octob.

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C H A P. III.

Of raising a Tree from the B U D.

THIS appears at first Sight the most rational of all the Undertakings : we know that in a Bud are contained the Rudiments of the future Branch, and that in a State of growing. They require only Time to increase in Bigness, and after that being taken off and planted as Cuttings, they would send out Roots and grow into so many Trees ; therefore all that can be required to their Success in this Operation, is to promote their sending out such Roots at once ; to this they are sufficiently disposed in the Bud ; the only Danger is its rotting from the large Wound made in taking it off ; and as this is prevented by the Cement, there is the fairest

Prospect of Success.

Chuse for this Purpose any Tree which has Buds, or the Rudiments of Branches in the Bottoms of the Leaves. Take off a Leaf carefully with the Bud entire, wipe the wounded Part after you have made it perfectly smooth, and cover it with the Cement : then plant it in the same Manner in a shady Border, at so small a Depth that the Top of the Bud may have the Advantage of the Air ; it will thus rise up to a regular Shoot ; and a Number of these being raised together, are to be removed at six Inches Height into a Nursery Bed, and treated as other Kinds.

C H A P. IV.

Of propagating by the Branches in large P I E C E S.

THIS is the Method by Roots transfered to the Branches ; and in the present Instance where large Pieces of the Branches are used, it may be considered as another Way of propagating by Buds.

Cut off a Branch or Shoot from a Tree which has a great Number of Buds upon it, take off so many of these as to leave only such a Number as may stand at three Inches from one another. Cover the Wound at the End, and all the others made by taking off the Buds, with the melted Cement. Open a Trench in a shady Border of the Length of the Branch, and lay it thus prepared, horizontally in the Trench ; draw the Mould well about it, and

press it every where close ; cover it about half an Inch, and give a gentle Watering ; shade the Place for some Time.

The Buds will all shoot up in Branches, and there will be Roots produced in other Parts of the Branch.

When the Shoots are four Inches high, the Branch must be taken up, and cut into as many Pieces as there are good Shoots : the Wounds at the two Ends must be covered with the Cement ; and they must be planted in a Nursery Bed. Let them be shaded and watered now and then, till they have taken Root ; and they will afterwards require no other Care than is allowed to all Trees of a like Growth.

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C H A P. V.

Of Propagation by the Branches in small P I E C E S.

THE Practicability of this is founded upon the same Reasoning with that of the Growth from Parts or Pieces of Roots ; and this we know to be the more easy and certain, by what we see in the common Method by Cuttings.

In general they would succeed better than they do, if the Bottoms or cut Part were covered at the Pith, with this Cement ; and many Kinds would succeed this Way constantly, which are apt to fail in the common Practice.

I have observed that in those Cuttings which have decayed, instead of striking Root, the Bottom has been rotted when taken out of the Ground. This has led me to the na-

tural Operation of covering the Pith with this Cement, when I repeated the Trial ; and this with Success. It is an Article of Consequence in Gardening ; and more Trials should confirm it, for the Subject is yet too new for much Proof.

It would be a very acceptable Thing to the Nurseryman, to be able with Certainty to raise every Kind of Tree from Cuttings ; and we recommend it to him to try those Kinds which are most apt to fail, again with this Advantage, before he gives up the Expectation.

This may be considered as a very great Advantage

Octob. Advantage in the common Way of propagating by Cuttings; but what AGRICOLA proposes in the Multiplication by small Pieces of the Branches, is of much greater Importance, as it gives the Gardener from the same Quantity of the original Tree, a much greater Number of new ones.

The Method is this. Take off a Branch from the Tree where it can best be spared, and first cut off all the Shoots. Then cut the large Branches as well as the Shoots into Pieces of about three Inches in Length, chusing in the young Shoots those Parts which have Buds preferably to others; because they will yield the best and most regular Plants, though there is no Part that will not furnish some tolerable ones.

Cut the two Ends of these perfectly smooth, and cover them with the Cement.

The best Method with these Pieces is to set a Pot of Cement over a gentle Fire that will keep it just melted; and wiping the two Ends perfectly dry, to dip them in the melted

Octob. Cement. As much as is necessary to defend them from the Moisture of the Earth, or as will stick to them, and they will then be in a Condition to plant.

Dig up a Border in the Nursery where the Mould is good; and if it be not so naturally, add some Pond Mud and Cow Dung, let it be perfectly fine. Open Trenches all along this at a Foot Distance; and in these plant the Pieces with that which was naturally the lower End downwards: let the upper End stand half an Inch above the Surface, and press the Mould close about these Pieces. Place some Hoops over the Bed, and draw over them some Mats or Canvas.

Let the two Ends be at all Times open, and about three Hours after Noon take off the Covering entirely; let the Bed remain open till ten o'Clock in the Morning, and then cover it as before: when the Mould is dry allow moderate Waterings; and by this Means there will be a good Plant from every Piece: scarce one in twenty will fail.



C H A P. VI.

Of the tenderer K I N D S.

BY these Methods the Generality of harder Trees and Shrubs may be propagated with an abundant Encrease; and the most tender will succeed in the same Manner, allowing them the Advantages of Heat underneath, and Shelter.

A Bed with Dung, hooped over as we have directed for raising the Cuttings of the tender Greenhouse Plants, will be very proper for those of a middle Degree of Hardness; and as for the most tender and delicate, they must be planted in Pots, and set in Bark Beds. There is no Reason why the usual Advantages should be denied to a Practice, which promises so considerable Profit to the Person who engages in it; and with these, the Growth is as certain as in any common Plantation.

The particular Cautions are these. That in these Bark Beds the Pots be large; for it will

be better to raise a great Number in a few large Pots, than in more that are smaller; the Quantity of a Mould greatly assisting in the Success of the Operation: and that when the Shoots first appear above the Surface, they must be carefully defended from the Sun by shading the Glasses in the middle of the Day.

The Mould in general must be kept in a due Temper of Moisture by proper Waterings; and these must be more frequent after the new Plants appear.

When they have four Inches Height they must be taken up, and planted out into little Pots, one in each, and they will then require only the usual Care; to be watered at Times, to be screened from the Sun till well rooted in the new Mould; and as they encrease in Size, to be shifted into larger Pots.

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COMPLEAT BODY of GARDENING.

NUMBER LVIII.

For the latter End of OCTOBER.

SECTION I.

FLORA, or the PLEASURE GARDEN.

CHAP. I.

Curious Plants and Flowers now in their Perfection.

I. DWARF EVERGREEN PHASEOLUS.

Octob.
Pl. 58.
Fig. 1.

THIS very singular and delicate little Plant, is extremely worthy the Attention of the Gardener: the wild Freedom of its Growth, and Singularity of its Aspect, make very good Amends for the Pains of raising and preserving it. Those who have written of the *American* Plants have named it; but the early Writers could have no Knowledge of it, for 'tis not found native in any other Part of the World.

BREYNIUS calls it *Phaseolus minimus perennis Americanus, flore luteo foliis asari lanuginosis solitariis*: small American perennial Phaseolus, with yellow Flowers, and single hoary Leaves resembling those of *Asarabana*. COMMELINE, who raised it in the *Amsterdam* Garden, preserved the same Name; and others after him.

The Root is white, thick, and hung with many Fibres.

The Stalks are numerous, weak, and of a pale green, often ting'd toward the Bottom with purple. They lie upon the Ground, or twist themselves about Sticks, or entangle in various Ways with any other: this is a Token of Neglect; and the best Method is to allow them slight Supports.

The Leaves stand singly, and irregularly on the Stalks; they are roundish, but indented for the Footstalks. Their Colour is a deep blackish green, and they are cover'd with a light greyish Hoaryness. Their Footstalks are long, and often red.

The Flowers are minute, but very pretty:
Numb. LVIII.

their Colour is a tawny redish on the Outside, and a delicate yellow within: they rise from the Bosoms of the Leaves usually two together; sometimes singly, sometimes more than two, and they are succeeded by oblong Pods; containing sometimes only one, rarely more than two Seeds.

Each Flower has its Cup divided into five Segments, in such manner as to represent two Lips: the upper one form'd of two, the lower of three of the Segments.

The Flower itself is papilionaceous.

The Vexillum is obtuse, heart-shaped, and turn'd back at the Edges.

The Alæ are oval, and have long Bottoms, and they are nearly as long as the Vexillum.

The Carina is narrow, and turn'd about in a spiral Manner.

In the Centre are ten Filaments: nine of them coalesce into a Body, and one stands loose: they are placed within the Carina, and twisted with it. The Style is single, and is twisted with them. It rises from an oblong, compressed, hairy Rudiment of the Pod, and is terminated by a thick, hairy Stigma or Head.

The Coalescence of the Bodies of the Filaments is the Mark of the Class in this Instance; it refers the Plant to the *Dicladelpia*, and their Number being ten, to the *Decandria*; this being only a subordinate Distinction in Classes, whose Character is taken from other Circumstances.

Octob.

Octob.

Culture of this PHASEOLUS.

It is a Native of the warmer Parts of *America*, where it rises frequent in their Thickets, twisting itself among the Branches, and running often to the Height of four or more Feet. With us it will require a Stove to give it full Perfection; but it may be preserved tolerably in the Greenhouse in Winter, and open Air in Summer.

The Seeds are easily obtain'd from Abroad; or it will grow from those which ripen here. The Method must be this:

Fill a Pot with rich Garden Mould within an Inch of the Rim, scatter on a Dozen of good Seeds, sift over them a Quarter of an Inch of Mould, and sprinkle on a little Water. Set the Pot up to the Rim in a Bark-bed, and when the Mould is too dry, give it a little more watering.

When the young Plants come up, let them at

Times have a little Air; and when they are big enough to be removed, take them carefully up, and plant each in a separate small Pot. Set these also up to the Rim in the Bark, give them a gentle watering, and shade the Glasses from the Sun till they have taken Root.

Then give them Air by degrees, as at first, and when they are well establish'd, remove them into the Stove.

As they increase in Size, let them be removed into fresh Pots, and at each Time let the whole Ball of Earth be shook out, the extream Fibres of the Roots trim'd round, and the Ball set upon an Inch of fresh Mould in the same Pot; and as much put in round it as will fill up the Space within, and cover the whole Ball an Inch deep.

Some fresh Mould should afterwards be put in upon the Surface twice a Year, scraping off an Inch or more of the other; and thus the Plant will flourish as in its native Country, green all the Year; and elegant even without its Flowers.

2. GREEN FLOWERED SQUILL.

Pl. 58. This is a very specious and noble Plant; and
Fig. 2. to those who consider these Things less attentively, would appear a distinct Species from the common *Squill*. It is, however, no more than a Variety; differing in the Size of the Plant, and Colouring of the Flower: these Variations our more correct Student has been taught are not enough to constitute a specifick Distinction; and tho' they are extreamly worthy the Notice of the Gardener, they sink under his Eye into slight accidental Changes.

The Reader who remembers that the Generality of botanical Writers have made two Kinds of *Squill*, of the red and the white rooted Plant, *scilla radice rubra*, and *scilla radice alba*; and honour'd them with separate Descriptions, though differing in scarce the least Article beside, will not wonder that this larger Plant, whose Root is neither white nor red, and whose Flower is greatly superior to the common Kind, should have appear'd to COMMELINE, who received it from *Africa*, a distinct Species. He will find however, that all its Variation is accidental; and that tho' this Author, and before him HERMAN, have called it *scilla Africana flore viridi parvo, bulbo amplissimo*: great rooted African Squill, with small Flowers; he is to refer it to the common Kind.

This LINNÆUS characterises by the Structure of the Root, *scilla radice tunicata*: coated rooted Squill, a most absolute Distinction from all the other Species: for though we join with them, according to the *Linnean* Method, the *starry Hyacinths*, there is not another coated Bulb among them.

The Root of this is well proportion'd to the Size of the Plant; it is as big as a Child's Head, of an oval Form, yellow, and composed of numerous thick Coats, the outer ones of which

are variously broken; and hung at the Bottom with many thick Fibres. The Taste of the Root is uncommonly nauseous, and the Juice so sharp that it blisters the Skin.

The Leaves are oblong, broad, of a deep green, pointed, and hollow'd; they are also full of a thick acrid Juice: they are nine or ten Inches long, and of the Breadth of three Fingers. These naturally appear in Spring; and when the Plant is ill managed, they are all the Produce.

The Stalk which supports the Flowers rises naked; and is thick, round, juicy, redish, and four Foot high.

The Flowers are small, but they are innumerable; they cloath the Top of the Stalk for more than two Foot; thick-set together in form of a Spike. Their Colour is mix'd of green and white; sometimes they will be entirely green, and in that Case they are not inelegant, but the perfect Beauty of the Plant is, when the green is laid in thin Stripes upon a white Ground.

Each Flower is composed of six expanded Petals, and rises naked from the Footstalk.

In the Centre stand six Filaments; they are short and smallest toward the Top, and are crown'd with oblong incumbent Buttons.

The Style is simple, of the Length of the Filaments, and terminated by a small Head: it rises from a roundish Rudiment of a Fruit, and is followed by a smooth oval Seed-vessel, marked with three Furrows, and form'd of three Valves: within it is divided into three Cells, in each of which are several roundish Seeds.

The Student can be at no Loss for the Class of this Plant, its six Filaments refer it to the *Hexandria*, and the single Style to the *Monogynia*, LINNÆUS's sixth Class, and its first Section.

Culture

Octob.

Culture of this Squill.

It is a Native of the Sea Coasts of *Africa*, whence the vast Bulbs may be easily brought to *England*. If they be taken up when the Stalk is faded, and brought over in Nets hung up in an airy Part of the Ship, there will be no fear of their being received in good Condition.

The Compost for them must be this:

Mix equal Parts of fresh Pasture Mould, and Wood-pile Earth, and to a Bushel of this put a Peck of wet Sea Sand; or if that cannot be had, the same Quantity of River Sand, or Pit Sand, clean wash'd, and a Quart of Brine. These should be thrown up in a Heap for some time; and when the Roots are received, let as many Pots be prepared as there are of them. Though the Roots are large, let the Pots be small in Proportion, two Inches clear round the Outside of the Root is as much Space as is needful.

Lay an Oyster-shell over the Hole of the Pot, to prevent its clogging up with the Mould; and if the Roots arrive in the Beginning of Summer,

which is the best Time, plant one in each Pot. First lay in two Inches and a half Depth of the Compost, then clean the Root, and set it upright: pour in more, shaking it down at Times to fill the Space about; and cover the Root an Inch above its Crown.

In this manner plant all the Roots. Then chuse a shelter'd Part of the Nursery, and open a Trench a Spade Depth and Breadth: set in the Pots in a Row, and draw the Mould about them: give them a very slight sprinkling of Water, and let them stand thus till the Shoot appears; now and then watering them with a very careful and light Hand.

When they shew the Shoot above the Surface, raise the Pots half out of the Ground, and give every other Day a fresh Watering: a Week after this remove them into a Greenhouse, continuing to water them from Time to Time; and let them stand near the Window, open to the Sun, and defended from all cold Winds; the Shoot will thus grow very quick, and flower in all its Glory.

3. WILLOW-LEAVED SHRUB ASCLEPIAS.

Pl. 58.
Fig. 3.

This elegant and singular *Asclepias* is very well worth the Attention of all who propagate curious Plants: it is of regular Growth, and pleasing Aspect; and not only of considerable Duration in the Time of flowering, but full of Singularity in the Fruit.

The late Writers have all named it; the first of them as an *Apocynum*, but the latter as an *Asclepias*. HERMAN calls it, *Apocynum erectum Africannum, villosa fructu, salicis folio*. PLUKENET, *Apocynum erectum elatius salicis augusto folio, folliculis pilosis*.

LINNÆUS and VAN ROYEN consider it as an *Asclepias*, and the former very distinctly names it, *Asclepias foliis revolutis lanceolatis caule fruticoso*: shrubby *Asclepias*, with the Leaves lanceolate, and turn'd at the Edges.

The Root is spreading, and hung with many long Fibres.

The Stem is woody, and cover'd with a brown Bark. The Branches are numerous, and the young Shoots are green, ting'd often in part with red.

The Leaves on the lower Part of the Branches stand in Pairs, but toward the Top less regularly: they are long, narrow, and of a faint green, curled frequently at the Edges, and mark'd with redish Ribs.

The Flowers rise from the Bosoms of the Leaves in small Umbells, six or eight in each. These have a long common Footstalk, and from the Head of that as many separate shorter Footstalks as there are Flowers. These spread out, and form the open rounded Head; and the whole Umbell naturally hangs or droops a little. The Colour of the Flowers is a pale whitish green in the Petals, and a duskier Tinge with somewhat

of yellowish or hoary in the Middle.

Each Flower is composed of five Segments of a Petal, and a conspicuous Nectarium, and is placed in a Cup form'd of one Piece, cut into five slight Parts.

The Cup is small in comparison of the Flower; and is permanent.

The five Segments of the Flower resemble so many Petals: they are of an oval Figure, but pointed, and lightly turn'd with the Sun.

The Nectaria are equal in number to the Segments of the Flower, and they surround the Parts of Impregnation. Each is of a Figure approaching to oval, but obliquely auriculated on the Outside; and from the Base rises a kind of small Horn, which bends toward the Parts of Impregnation.

Beside this, there is a truncated Body, which covers the Organs of Impregnation, with five Scales at the Edge, and as many Openings at the Sides: this is an Appendage of the Nectarium.

The Buttons are five, they have scarce any Filaments, and they are buried, as it were, by the truncated Body of the Nectarium among the Scales.

This is a most singular Construction of a Flower, it is peculiar to the *Asclepias's*, but universal among them; and it therefore most plainly and certainly refers this Plant to the rest.

There are two Rudiments of Fruit to each Flower; they have scarce any Styles, but are crown'd with simple Stigmata, and are at length ripen'd into two large, oblong, in flatted Pods; containing numerous Seeds wing'd with Down, and a loose Receptacle.

The five Buttons refer the Plant to the *Pentandria*

Octob. *tandria* of LINNÆUS, and the two Heads to the *Digynia*, the fifth Class of that Author, and its second Section.

We have occasionally observ'd, that where there are no Filaments, the Buttons are to be counted in their Place; and where there are no Styles, the Stigmata or Heads. This Plant shews an Instance of both Cases.

Culture of this ASCLEPIAS.

It is a Native of the warmer Parts of *Africa*, where it lives freely in a dry sandy Soil, exposed to the full Sun: but though it bears this Heat, and Barrenness, 'tis not the Soil or Exposure most suited to its thriving.

When it happens to fall into the Side of a Thicket, where there is Shelter, and a better Mould, it shews more Vigour and more Beauty. According to these Differences it will produce Flowers of deeper or paler Colour in a great Variety; and we see some considerable Change in them in this Respect, but it is in the State wherein we have represented them they are most elegant.

The Gardener has his Choice of raising it from

Octob. Seed, or by Cuttings: but there is no Advantage in the raising it from the Seed, which is the more tedious Way; and the Cuttings take root so easily, that it is better to depend on them.

The best Season for planting these Cuttings is *June*, and they should have the Advantage of a Hot-bed. In this let them be kept till they have taken good root; and then let them be taken up, and planted separately in Pots, of one of the light Composts.

They should then be set in the Hot-bed again, and shaded from the Noon-day Sun. They should also be water'd every Evening; and when they are well establish'd, they should be more perfectly harden'd by keeping open the Glasses, and then brought out among the Greenhouse Plants.

They must be early in Autumn taken into the House, and removed into larger Pots, as they increase in Size; always preserving the whole Ball from the former Pot about them, and trimming the Fibres that hang from its Edges.

They will thus grow to six or eight Foot high, and flower as well as in their native Country.

4. CORYMBOUS LOBATED SPIRÆA:

Pl. 58. This is a very elegant Shrub, brought long
Fig. 4. since from *North America* into our Gardens; and for its Singularity as well as Beauty, very worthy to be preserved in all Collections. Those who first saw it flower, greatly mistook its proper Genus: they refer'd it to the *Euonymus*, or spindle Tree, though neither Flower nor Fruit had any true Resemblance to that Kind.

COMMELINE calls it *Euonymus Virginiana, ribesii folio, capsulis eleganter bullatis*: Currant-leav'd Virginian *Euonymus*, with elegantly bullated Fruit. LINNÆUS refer'd it to the *Spiræa*, and VAN ROYEN follows him: he calls it *Spiræa foliis lobatis, serratis, corymbis terminalibus*: lobated, and serrated leav'd *Spiræa*, with Clusters of Flowers terminating the Branches.

The Root is divided into many Parts, and hung with numerous Fibres.

The Stem is cover'd with a pale brown Bark.

The Branches are numerous, and greyish; the extream Shoots are of a fresh green, ting'd with red, and they have four Ridges which give them a square Aspect.

The Leaves are placed in a scatter'd Manner upon the Branches, and are broad, and of a pale green: they have long green Footstalks, and they are divided in an irregular Manner into three Parts, usually, some into five, and others scarce at all. The Divisions are deep, but not to the Base; and they are all notch'd round the Edges.

The Name of Currant-leav'd is not given amiss to this Shrub: we have observ'd, that all the Leaves are not alike, but the Generality of them very much resemble those of the Currant Bush.

The Flowers are numerous and elegant; they are small in themselves, but they stand in great Tufts, after the manner of Umbells, at the Extremities of all the Branches; and they are white, with a light and delicate blush of Crimson.

Each Flower has its separate Footstalk, which is of a faint green, ting'd with red.

The Cup is form'd of a single Leaf, and is lightly divided into five Segments. The Base is plain, and the Segments are acute.

The Body of the Flower is form'd of five rounded, but somewhat oblong Petals, which are inserted into the Cup.

The Filaments are numerous, upright, and inserted into the Cup; they stand cluster'd together, and they are crown'd with roundish Buttons.

The Rudiments are three, they are crown'd with so many Styles, and these with thick Heads: the Styles are equal in Length to the Filaments, so that their Heads shew themselves distinctly in the Flower.

The Seed-vessels are oblong, compressed, and pointed; they are equal in number to the Rudiments, and each contains a few small Seeds.

The Number of Filaments, with their Insertion into the Cup, shews the Plant to be one of the *Icosandria*, and the three Styles refer it to the *Trigynia*.

This is its absolute Place as a Plant; but as a Species of *Spiræa*, LINNÆUS has placed it among the *Pentagynia*; the Generality of the others have five Styles. Indeed this Genus is too compressive to be just, he ranges under it the *Spiræa*, of others the *Filipendula*, *Ulmaria*, and *Aruncus*, though



Dwarf evergreen Ipheaeolus



Green flower'd Squill



Willowleaved Shrub Asclepias



Cymbose lobated Spiraea



Purple Ethiopian Amaryllis



Prickly Osteospermum

Octob. though possible these have very essential Distinctions. That this Plant has only three Styles, that the *Aruncus* has Male and Female Flowers on separate Plants, and belongs therefore to the *Diocelia*, that the *Ulmaria* has twisted, and the *Filipendula* rotated Capsules. These are Differences in Nature, but the Genus is made to contain them all.

Culture of this SPIRÆA.

It is a Native of *North America*, where it thrives best in a deep rich Soil: with us it will very well bear the open Ground, and stand all Weathers; and may be propagated by Cuttings, or by Layers; but the easiest Way of all is by the Suckers, which it naturally sends up in Abundance about the old Plants; and which take root freely.

The Suckers should be taken off in Autumn, and planted at two Foot Distance in a Nursery-bed, to acquire a due Size for the Garden.

If no Use were made of them, it would be proper annually to take them off, because they disfigure and exhaust the old Plants; and they grow with so little Trouble, that it is pity any body should lose the Opportunity of raising so many pretty Plants.

Octob. The Layers take root freely enough, and the Cuttings seldom fail, if the hollow or pithy Part be secured by a Piece of Bees-wax.

The Layers will be fit to transplant at the End of a Year; and the Cuttings, if they have the Advantage of a mellow Soil, and shady Situation, will take sufficient Root to be removed in two Months.

Whichever Way the Tree is raised, it must be train'd in the same Manner. If left to Nature, it grows a wild stragling Shrub; and 'tis much better to carry it up with a single Stem, and not to suffer it to have too many side Branches.

When the Shrubs are brought into their Places in the Garden, the Ground should be well broke all about them, and their Heads finally trim'd to due Form: after this they will require only to be clear'd of their Suckers, and reduced to Shape every Autumn.

If there be any Branches that cross and gall each other, one of them must be cut off; and any dead Wood must be cut out from the Head: the Ground should from Time to Time be broke about them, and always kept clear from Weeds; and about the Time of their flowering they should have good Waterings.

5. PURPLE ÆTHIOPIAN AMARYLLIS.

Pl. 58. There is scarce a Flower the Gardener raises superior to this; whether we consider the Number, Size, Colouring, or Fragrance of the Bloom; but taking all together, very few can be said to equal it. It has been described by some of the Writers in Botany of considerable standing; and has been many Years esteem'd in *Holland* one of the greatest Acquisitions from that Quarter of the World whence we have named it; but in *England* it is less known than so elegant and noble a Plant deserves; notwithstanding there is no great Difficulty in the Culture.

Cornutus refer'd it to the *Narcissus* Kind, as the Writers of his Time did many of the Species of this elegant Genus: he calls it *Narcissus major indicus serotinus*. COMMELINE calls it, *Lilio narcissus Africanus platycaulos humilis flore purpurascens odorato*: low flat-stalk'd Lillio *Narcissus* of *Africa*, with sweet scented purple Flowers.

The Characters of the bulbous Plants were never ascertain'd till LINNÆUS gave them with Precision: his Genus *Amaryllis* comprehends this Plant; and as he has not named it, we may properly call it after his Manner, *Amaryllis spatba multiflora, corollis æqualibus, foliis acuminatis*: many flower'd *Amaryllis*, with regular Flowers, and sharp pointed Leaves. This will distinguish it from all the other known Species of *Amaryllis*, and particularly from the oriental Kind, we have described in a preceding Number, with which, so long ago as in COMMELINE's Time, it was usually confounded; and from which it does not seem yet to be well distinguish'd by the Generality of
Nº 58.

Authors; though perfectly different in the Shape of the Leaves, and regular Flowers.

The Root is large, roundish, and of a dusky yellow Colour: from its Base run many very thick, white Fibres.

The Leaves are numerous, and they lie scatter'd irregularly upon the Ground: they are very long, moderately broad, of a pale green, and sharp pointed, and they are mark'd with large longitudinal Fibres.

The Stalk is very thick; eight Inches high, flattened, firm, and of a pale green, often stain'd with red.

There are no Leaves, nor Rudiments of Leaves on this, but at its Top a membranous Scabbard, which contains the Flowers. These are numerous, very large, and extremely beautiful: they rise in a kind of conic Head, twenty or more in number, and separate to some distance as they open. Their Colour in the Bud is a pale crimson, stain'd in different Places with purple; but as they open, they grow deeper, and when full blown, they are universally of a strong and fine purple. Their Scent is in the highest degree fragrant, and toward Evening especially it is overpowering.

Each Flower is composed of six Petals, of a lanceolated Form, equal in Size, and opening regularly every Way, and there is no Cup to them beside the general Scabbard.

In the Centre stand six Filaments crown'd with oblong, incumbent Buttons.

The Rudiment of the Fruit is oblong, and furrow'd;
8 N row'd;

Octob. row'd; it stands underneath the Receptacle of the Flower, and from it rises a Style equal in Length and Thickness to the Filaments, with a small three-parted Head.

The Seed-vessel when ripe is oval, and form'd of three Valves; it is divided within into three Cells, and in each are many Seeds.

The Clafs and Place of the Plant are seen distinctly in the fix Filaments, and single Style: the first refer it to the *Hexandria*, the second to the *Monogynia*.

Culture of this AMARYLLIS.

It is native of *Æthiopia*, and lives there in loose and warm Soils; with us it will require the Choice of such a Compost as resembles that kind of Earth, and all the Assistance of additional Warmth.

The Roots will bear to be kept out of the Ground a considerable Time, when taken up at a proper Season. They were thus first brought into *Holland*, and may from thence, or even from their native Country, be brought hither.

When they are received, which should be early in Summer, a Compost should be prepared for them of some of the light Kinds, from one of the Heaps made up for other Purposes, with a fifth Part of rotted Dung, from an old Melon-bed.

Octob. As many Pots must be got ready as there are Roots; some loose Gravel must be thrown into the Bottom, and over this two Inches of the Mould: upon this the Roots must be placed, and the Pot filled up, so that it may be cover'd two Inches.

The Pots must then be set under a Frame, and the Earth at Times moisten'd. The Shoot will appear in five or six Weeks, and after this they must be water'd more largely, and have more Air.

When this has advanced to some Height, they must be removed into the Stove, where they will flower in perfect Beauty.

The Flowers do not come forth all together, but in a long Succession, so that one Plant will be three Weeks from the first Flower to the Decay.

After this the Pots must be every Spring refresh'd with some new Mould, the Top of that in the Pot being taken off for that Purpose; and once in two Years the Roots must be taken up, and the whole Quantity turn'd out. Its Place must be supply'd with fresh Compost, the Roots must be clear'd, and their Off-sets taken away, and planted in other Pots, to bring them to a Condition of flowering; and this Way the Plant will be propagated in tolerable Quantity.

6. PRICKLY OSTEOSPERMUM.

Pl. 58.
Fig. 6.

This elegant shrubby Plant is another of those Additions to our Collections of Exoticks, which we owe to the *Dutch*; who brought it from the hottest Parts of *Africa*. The old Authors were not acquainted with it, and those among the later who have described it, scarce knew till LINNÆUS by what Name to call it: VOLKAMER rank'd it among the *Chrysanthemums*, adding, *Africanum frutescens spinosum*: shrubby, prickly African Chrysanthemum.

COMMELINE, who saw it was like the *Chrysanthemum*, but not the same, called it *Chrysanthemoides*, and added, *Osteospermum Africanum, odoratum spinosum & viscosum*: prickly and clammy, scented, hard seeded African Chrysanthemoides.

LINNÆUS finding several other Plants, as well as this, though resembling the *Chrysanthemum*, to differ in essential Characters both from that and all the other Genera of Plants, put them together under this generical Name, *Osteospermum*; he adds as the Distinction of this Species, *Spinis ramosis*: *Osteospermum*, with branch'd Spires.

The Root is divided into many Parts, and hung with a Multitude of Fibres.

The Stalk is round, upright, woody, and a Foot and half high, divided into numerous Branches, and thick set with Leaves.

The main Stalk is brown; the Branches and young Shoots are paler, and they are often ting'd with red.

The Spines or Prickles have a very singular

Situation, they are seen no where but on the Top of the Plant: the Extremities of the Shoots divide into them, and they are firm and branch'd, three or four Points proceeding from one common Base. These terminate those Branches on which there are no Flowers. When a Flower rises at the End, there often are none, at the most only some very slight ones on the Sides of the Stalk.

The young Shoots are usually a little downy.

The Leaves are numerous, and they stand without the least Order or Regularity upon the Branches. They have no Footstalks. They are oblong, deeply and irregularly notch'd, somewhat in the Bucks-horn Manner, and sharp pointed; and they are of a firm Substance, and faint green.

The young Shoots and all the Leaves are clammy to the Touch, and strongly scented; they seem to sweat out a soft Resin, and the Smell is strongly resinous, with a peculiar Flavour not unlike that of Balsam Capivi.

The Flowers are large, of a very elegant Structure, and yellow: they terminate the Branches, and have often the Appearance of growing from the swollen End of the Spines, which are lost in their Bases.

The Structure of the Flower demands the greatest Attention of the botanical Student; 'tis of the *Syngenesious* Kind, and they are all of curious Construction, but none more than this.

The

Octob. The entire Flower consists of a Number of Floscules surrounded by Rays, and contained in a common Cup. This is of a hemispherick Shape, and divided into eight or more Parts; simple at the Base, and the Segments are pointed.

The tubular Floscules in the Disk are numerous, they are also large, and they expand in the Manner of so many regular Flowers: these contain both male and female Organs of Impregnation.

The Rays which surround these are about ten in Number; and, as in the others of this Kind, they are only female.

The tubular Floscules of the Disk are smallest at the Bottom, wider to the Top, and there divided into five regular obtuse expanded Segments. In each of these are placed five very short capillary Filaments, and as many Buttons. These are long and narrow, and they coalesce as in the other Plants of this Class into a cylindrick Body.

The Rudiment of a Seed is placed under each, but it is slight and frivolous; there rises from it a single Style of the Length of the Filaments, but weak and slight; and at the Top of this is placed an ineffectual Stigma or Head.

In the others the Rays are long, narrow, and naturally divided into three Parts at the Extremity; but as they turn back their Ends when this is full open, these Divisions are not well seen. At the Base is a globular Rudiment, and from this a stout though slender Style, crowned with a thick Head nipp'd at the End.

The Floscules of the Centre ripen no Seeds; but after each of these Rays, in which there are no male Parts, there appears a regular Seed; which owing its Impregnation to the Buttons of the tubular Floscules, by Degrees hardens, and becomes coloured, retaining its globular Form, and includes a Kernel of the same globular Shape. The Covering or Shell is of a bony Hardness; and the Kernell white and well tasted.

The Class of the Plant is found in the Coalescence of the Buttons in the tubular Floscules: LINNÆUS has made this the Character of a Class, the Name of which is *Syngenesia*: and as the Rudiment under these tubular Floscules fade without producing Seeds, and those of the Verge have no Way of Impregnation but by means of their Dust; the Section to which it belongs is that of the *Polygamia necessaria*.

Culture of this *OSTEOSPERMUM*.

Octob.

The Plant, though a Native of *Africa*, will bear our Summers in the open Air, and only wants the Shelter of a Greenhouse in Winter. The Seeds sometimes ripen perfectly with us, and in that Case the best Plants will be produced from them, but the more usual Method is by Cuttings.

If the Seeds be good, or if fresh ones can be procured from *Africa*, they must be sown early in Spring upon a common Hot Bed; and when the Plants are strong enough to be removed, they must be transplanted into Pots placed under a Frame, and by Degrees hardened to the Air; after which they must be set out among the Greenhouse Plants, and housed with them in Autumn.

The Method by Cuttings is very easy, *June* is the best Season. They should be taken from a flourishing Plant, and they will require only a Bed of good Mould, with due Shelter from the Sun, and frequent Waterings. They will in this Manner take Root in about five or six Weeks, and soon after it will be proper to remove them into Pots. The best Mould will be some one of the light Composts, with the Addition of about one sixth Part River Sand.

When potted they must be sheltered as at first, till they are thoroughly rooted in the new Mould, and this must be promoted by frequent Waterings; when they are well established, they must be put out among the Greenhouse Plants: as they increase in Bigness, they must be removed into fresh Pots, larger than the former; but they never should have them very large, for nothing is more prejudicial. A great Quantity of Mould occasions the Plants to shoot out into numerous Leaves and Branches, but to produce few Flowers, the Intent is to make the Plant flower abundantly, and continue it through the Winter; but this is prevented by the over-potting.

When the Plants are new potted, the Roots upon the Surface of the old Ball of Earth should be trimm'd; and after the potting they should be watered every other Day; this will occasion the cut Ends of the Fibres to shoot out new ones; and the fresh and loose Mould will encourage them in it. In this Manner they will soon be brought to flower; and by this Management, if the Flowers are taken off as they begin to fade, the Plant will be covered with Leaves all the Year.

S E C T. II.

Of variegating the Leaves of PLANTS.

WE have reserved to this Place one of the most difficult Parts of the Gardener's Profession; perhaps the most difficult of all.

Many who have practised the Arts of Culture will be apt to give it a yet more discouraging Term; and either never having try'd

Octob. or having been discouraged by wanting Success, they will call it impossible. To these we answer by this plain Principle, founded upon whatever else we know, and in some Degree confirmed by Experience in this, that whatever Nature does in the Changes of the vegetable Creation, Art may imitate.

In some Instances, under a due Conduct, it will exceed whatever is done in the same Way by Nature; in others it will fall short of her Productions: what will be the Event in the present Instance is not as yet to be determined because the Trials are too few; but this plain Assertion we may make: the Leaves of Plants may be variegated by Art, because we have succeeded in doing it; and when we are sure something absolute is in our Reach, 'tis very difficult to say where the Effects of ingenious Labour may stop.

Nature first gave the Hint for doubling of Flowers, and we find in many Instances Art can tread happily in her Steps: the Gardener has succeeded in raising double Flowers of many

Octob. Kinds from Seed, while he has followed a Practice little understood.

We hope from the Rules we have laid down in a former Number on that Subject, the Success in this Way will be greater; and not only better Flowers in the Kinds usually doubled will be produced, but many will be doubled which the Gardener did not suppose capable of that Addition. Upon the same Principle we shall proceed in this more difficult Research of the Variegation of Leaves, considering first what is known upon the Subject, and what may be farther deduced from that Knowledge; and then laying down the Rules for attempting the Thing regularly in Plantations.

We shall not only examine what Nature does, but so far as the Causes appear, how she does it; adding what Chance has discovered in our Plantations, for to Chance we must acknowledge all is owing that is yet known concerning it; and from these Premises we shall deduce such Conclusions as they will sufficiently support, and thence the Rules for the Practice.



CHAP. I.

Of the Effects of Nature in the Striping and blotching the Leaves of Trees.

SO much Analogy we must allow between the Flowers of Plants and their Leaves, that whatsoever Cause can affect a Change in the Colour of the one, may be naturally supposed to have some Power also in Regard of the other. This Observation is useful, because in the State of Nature we much oftener see Changes in the Colours of Flowers, than in the Leaves of Plants.

The common Variation in Flowers is from their natural strong Colours to become white. In some Leaves we see this also happen, but more frequently the Change is into yellow.

The delicate Structure of Flowers renders them more susceptible of this Change than the Leaves, which are more gross and hard: this is the Reason why in Nature we see Flowers without their Colour, much oftener than Leaves stain'd with yellow; and that we find the last very common in Gardens, is owing to the Labour and Care of the Gardener, who when he has one such Plant never fails to propagate it farther. Nature assists him in this by continuing the Variegation in the increased Plants in a very surprising Manner.

The Colours of Flowers which are most frequently lost, are a strong blue, or a deep red. We see Instances of the first in the little Field Bell-flower, and in the Crowfoot Crane's-bill of the latter; in the bloody Crane's-bill, and Herb Robert; the Flowers of the two first are naturally of a strong blue, and those of the two others of a strong red; particularly that named from this Circumstance, Bloody. In these and in many

other Plants, whose Flowers are naturally of the same bold Colours, we frequently see them white; and in the Bloody Crane's-bill particularly there is an intermediate State of Colouring between that deep Dye and absolute white; in which the Flower is streaked. This has been called the strip'd Lancashire Crane's-bill, it having been first seen, and, so far as I know, only, wild in that Country.

Universally where the Plants are found with white Flowers the Soil is dry and barren. The Seeds of the common blue or red Flowers, produce upon those Soils Plants with white ones; and the Seeds of those white Flowers, sown on good Ground, do not produce white flower'd Plants, but such as are blue or red, in the Manner of those of the Plants from which they were scattered, which had produced the white.

We see in this Instance, that Colour can be affected in a Plant by the Accidents of its Growth; and in what Manner it can be affected. We see the Effect and the Cause, and we are therefore certain of the Conclusion that may be drawn from it.

As much Moisture tends to double the Flowers of Plants without altering their Colour; a dry and barren Soil tends to rob them of their Colour, without reducing the Size, or diminishing the Number of Petals. That which can affect the delicate and more remote Parts, may also have Influence on the grosser and more near; therefore the Soil may have Power to alter the Colours in the Leaves of Plants: but something more is requisite for the Change of Leaves;

Octob. Leaves; which is the present Subject. The Alteration made in Flowers, is by partly or totally taking away the Colour; but in Leaves the native Tinge is not only taken away, but another is brought on in its Place: in Flowers the coloured Juices are detained, but in the Case of Leaves they are altered. It appears therefore, that as only Barrenness is required to effect the one, some active Principle will be necessary to bring on the other.

The Juices of Plants are secreted through

innumerable Glands, the Structure of which is admirable; they are not less complex than those of our own Bodies; these Glands are contrived by Nature for different Juices of peculiar Kinds and Colours; but as in animal Bodies so in these of Vegetables, they are liable to Obstruction and Disease; and in that Case the Juices will partake of the distempered Quality.

This is a great Cause of what we see in Nature; and we have observed, that ill-suited Soils cause the Distemper.

Octob.

C H A P. II.

Of the Course of Nourishment in P L A N T S.

THE Gardener will find we lead him on in this new Attempt from the Source and Origin of all the Qualities of Plants: 'tis only by that general Knowledge he can attain the Management of so particular a Subject, as that of staining the Leaves of Plants.

The Construction of a Plant is this. There is a thin outer Rind, within that a thicker Bark, next under this is a more firm Matter, which surrounds the woody Part; and within this is a Hollow reserved for the Pith.

All Plants which rise with a Stalk, from the Whitlowgrafs of the Wall, to the Mountain Pine, have these five Parts; they are more distinct in some, and less in others, but a good Eye will see them in most, and a Microscope in all.

The Pith, which is vulgarly supposed an inconsiderable Substance, and which some Authors of Credit have only thought a Kind of Stuffing to keep out the firm Part of the Stalk, is indeed the most essential Article in the Construction. Thus the Filaments and Antheræ of Flowers were once understood to be only excrementitious Parts; but a better Philosophy shews they are the most essential of all: this early Mistake about the Pith is such another, and 'tis as lately set right.

From this Pith, or from that central Part in other Kinds which analogous to it though more firm, Fibres are sent off Sideways, or obliquely upwards in regular Assortments, which penetrating the woody Substance and the Rind, form upon the Surface of the Plant a Bud, in which are the Rudiments of Leaves and Fruit, with the preceding Flowers. This is the Construction of a Plant.

The Root is composed exactly as the Stem, of all these Parts, and from its medullary Part sent Fibres with open Mouths for drawing Nourishment. This Nourishment is conveyed up in a watery Vehicle; and together makes what we call the Juice of the Plant. It is carried to all Parts in Vessels, and lodged occasionally in a Kind of Bladders, to be there wrought into various Kinds, to feed the Flowers, the Fruit,

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the Leaves, the Stem, and every other Part.

Within these Bladders are placed the Glands, from which it receives its Change; and as in our Bodies one Part of the same Nourishment is converted into Gall, and another into the pancreatic Juice; and so on; in the same Manner in Plants, the same Supply, passing the various Glands, assumes from them so many separate Tastes, Colours, and Qualities.

Every Plant of the same Kind performs all this in the same Manner, unless interrupted by Accidents, throughout an everlasting Succession; because the Seed contains the Pith of the succeeding Root.

The whole Seed is formed from the Heart of the Plant; and that Point or small Portion, which vegetates, and which we call the Heart of the Seed, is a Continuation of the Pith of the Plant. In every Part of that Pith are contained the Rudiments of Leaves and Flowers; for the Extremities of its Fibres, piercing the Wood and Bark every where, produce them. The same Rudiment is contained in this extreme Part; and when the Seed is committed to the Ground, it grows and sends them out according to its Nature.

This is the Philosophy of vegetable Propagation: that System was false as absurd, which supposed every Seed at the Creation to have contained the Rudiments of all the Plants, and all their Seeds which should rise from it; nor were they much wiser, who supposed an everlasting Round of new Creations.

All is thus resolved into a continued and successive Growth of the one first Plant, and its Parts in the plain Course of Nature. We have taken this Opportunity to explain it, because 'tis only from a true Knowledge of Vegetation, we can effect Changes in its Course and Order.

The extreme Fibres of the Roots are like the fabled Hydræheads, they multiply on being cut off: they take in the Juices, they convey them to the Root, whence they are sent up the Stalk and Branches to the Flowers and Fruit, in the Heart of whose Seeds the Fibres terminate.

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This

Octob. This is the Course of Juices in Plants, and in this Course it is lodged at various Distances in those Bladders, where the Glands are situated; and there it becomes altered according to the general Nature of the Plant, or of the Parts to which it is to be sent.

That the Glands perform this, without regard to the Nature of the Juices themselves, is evident: for Water alone will support many Plants, and each will have its Flavour, Virtues, Colours, and all other Qualities: the same Piece of Ground shall give Nourishment to a Plant of Spurge, and another of Celandine; in one of which the Juice is white, and in the other yellow; and a third of any common Kind, with watery Juices, will be supply'd in the same Place, and by the same Soil with them.

Hence we see, that though there be something in the Nature of the Soil with regard to this Change of Colour, there is more in the Vessels of the Plant; and this gives the rational Method of attempting the Variegation of Leaves by Art. The Principles will thus rise one from another in a Course of regular Enquiry; and the Operations

of the Vessels and Glands in Animals will best explain them: Octob.

As we have seen in Plants that the same Nourishment forms various Juices, we find in Animals that from the same Food, according to the distemper'd or healthy State of the Body, various Fluids are elaborated: yet there is something in the Nature of the Food that may act in concurrence with the other Causes; and more in Medicine.

As we know what will remove a Disorder, we also know in some degree what will bring it on, in the human Structure. The Green Sickness and the Jaundice discolour the Skin, and the white and yellow Stains on the Leaves of Plants, may be consider'd as their Chlorosis and Jaundice. We know better how to remedy, than how to bring on these Diseases, even if we could be inclined to do it in ourselves; and it is so in Plants.

We know that by removing a variegated Tree into a rich Earth, we can make the Leaves all green: this proves that a bad Soil had great Share in changing them yellow; and hence we are led to the rational Practice.



C H A P. III.

Of the natural Variegation of L E A V E S.

WE see in the wild State the Leaves of many Plants stain'd in the same Manner that they are in Gardens; and 'twas this natural Accident that first brought them thither. Those who have written on the Subject, have too rashly drawn general Conclusions from a few Instances.

It is the general Doctrine, and it is countenanced by Mr. RAY,* that variegated Shrubs may be propagated by Cuttings, or Layers, but not by Seeds; for that the new Plants raised from Parts of the old, retain the Variegation; but those from Seed rise plain.

This, however, is not true. I have two Years since raised variegated stinging Nettles from the Seeds of a variegated wild Plant; and have found that the stain'd Dulcamara, tho' no Plant grows so freely from Cuttings, preserves its Variegation better from Seed. In these Cases a proper Soil is essential; and other Articles, which we shall lay down when we come to the Practice.

The Gardeners † have also found this, for they affirm, that the variegated Sycamore rises variegated from Seed; to raise it this Way a proper Soil is an essential Article; but its being practicable with that Assistance, shews that the Distemperature is very universal: for it must have infected even the Pith of the Stem, and thence spread itself

to the Nucleus of the Seed, in a Condition to have disorder'd the minute Glands in that wonderful Organisation.

Seeds of plain Plants will sometimes also in the same Kinds of Soil, and with the same Management, produce striped ones. This is the Gardener's great Source of Hope: this he is to endeavour to make constant, and universal; and in that Course to follow strictly what he sees influence the Plants in Nature.

The last Year I traced with Care the several Accidents from which the staining might seem to have risen in two Plants, a Dulcamara, and a Nettle.

The Dulcamara had risen from Seeds of a Plant of the common Kind, near *Denham*, upon some Rubbish of an old Wall, thrown on the Bank of the River.

The Water had been higher than ordinary when the Seed struck; and afterwards had fallen considerably below the Place; there was not a stain upon the Original, or Parent Plant, but this had many of the Leaves spotted with a faint yellow.

The Nettle grew, and I think still grows near *Highbate*, upon the dry Bank of a Ditch, by the Road; which, on Examination, I found composed of gravelly Earth, and Lime Rubbish from

* *Historia Plantarum*, Vol. I. p. 41.

† *Miller*, who, I suppose, has try'd it.

Octob. an old Wall. The lower Leaves were stain'd ; and a few of the upper : the Colour a strong yellow.

In both these Cases the Remains of Mortar, that is, a Mixture wherein Lime was a principal Ingredient, was in the Cause ; and from the two parallel Cases, there is ground to suppose it had a great Share in producing the Effect.

The Dulcamara was a weak Plant, but the Leaves, except in Colour, unalter'd ; the Nettle grew strongly enough, but the Leaves were longer than usual, and narrower.

It appears from this, that the same Cause which stain'd the Leaves, also affected the general Growth of the Plants, weakening the one, and altering the Leaves of the other.

This Nettle, in earlier Times of Botany, would have been called a new Species. The Footstalks of the Leaves in the Nettle were also streaked with yellow, but not those of the Dulcamara.

This Accident, however, is not particular, for in some variegated Jasmines the young Shoots are stain'd ; and in some Fruit Trees even the Rind of the Fruit.

In the Marshes not far from *Thorndon*, the Seat of the Lord *PETRE*, we observed some Plants of the Meadow sweet near the Ditches of Salt Water ; and in these the Leaves were often irregularly blotch'd, and stain'd with yellow.

From these Observations it appears probable, that beside want of Water, and a rich Soil, which were deficient in both the Instances, the two greatest known Efficients for the striping and variegating the Leaves of Plants, are Lime and Sea Salt. There may be others : but these

are hence known with Certainty ; and this Effect of them is correspondent with the general Opinion and Experience of those who have examin'd into the Subject.

Mr. RAY determines, that the blotching and striping of Leaves, is the Effect of a distemper'd Condition of the Plant, and he mentions Lime as the Cause ; and the Experiments of those who have try'd Lime Water and Brine separately on growing Plants, shew that they take a like Effect.

It is not to be supposed, that the Variegations of Leaves can, in a regular Manner, be brought on by simple Waterings with a medicated Liquor ; but the Effect of these has been turning the Leaves altogether yellow, and afterwards destroying the Plants : both Lime and Salt are good Manures, but this is no Objection to the present Opinion.

For that Purpose they are to be mix'd in very small Quantities with the Earth : but when they form the greater Part of the Nourishment, they make the Plant fade ; and a Change of green into yellow is the first Operation.

The Gardener has here the Principles of the Variegation of Leaves, and the several Causes : he sees what Plants are, how constructed, and what those Ingredients in a Soil are, that tend to alter the Colour of the Leaves. From this the Practice may reasonably be attempted ; and on these Principles alone it can : for the Search must be sought in the Nature of Vegetables, and the Laws of Vegetation ; not in the *Newtonian* Doctrine of Light and Colours.



C H A P. IV.

The Method of Practice.

LET the Gardener recapitulate in his Memory the Principles we have just deduced from Observation, and he will find, that if there be not a Certainty, there is at least a fair Prospect of bringing on the Variegation of Plants at his Pleasure ; and will learn in what manner to attempt it.

He will remember that the Colouring, whether in Blotches or Streaks in the Body of the Leaf, or in an Edge round the Circumference, is the Effect of a diseased State of the Plant : that the Glands are the distemper'd Part ; and that Lime and Salt are two Ingredients known to assist in bringing on this Change.

He sees that the Seeds of Plants contain in their Heart the Rudiments of the Glands, for the Plant that is to grow from them ; and that if the disorder'd State of these Glands can be brought

on in the lower Part of the Plant, the Consequence must be the continuing it by proper Management throughout ; for the Leaves and Branches all are produced from the extream Fibres of the Pith.

Therefore far from depending upon Layers, Cuttings, or Budding, though all these Ways may take Effect, the true Method is to begin with the Seed.

The Means will be a proper Compost for the Plants ; a Liquor for steeping the Seed before sowing ; and a Water impregnated with the same Ingredients, for nourishing it in the Growth ; which must, by an artful Method, be convey'd immediately to some part of the glandular Structure, not altogether sent in by the common Course of the Fibres from the Root.

The Compost must be barren in its Nature, and

Octob. and impregnated with these Ingredients: let not the Gardener be afraid of making it too poor, for provided the Seeds will grow in it, the less rich the better.

Let him take three Bushels of Mould from a sandy Heath, and mix with it one Bushel of the Rubbish of an old Wall, and half a Pound of common Salt.

Let these be well blended together, and then make the Seed-bed in the following Manner:

Dig out the Mould a Spade and half deep, fill in the Remains of the Rubbish from which the other was sifted, and upon this throw in the Compost: level the Surface, and sow the impregnated Seeds.

For this Purpose make some Lime-water, by putting a Quarter of a Pound of Lime into three Pints of boiling Water; throw in half an Ounce of common Salt, and when the Water is clear, pour it off.

Put the Seeds into this in the Evening; and let them stand till the Evening following; then strain the Liquor through a Hair Sieve, and take them out. Sprinkle some Powder of slaked Lime over them, and scatter them on the Surface of the Bed.

Whatever be the Plant, or Tree, let no regard be had to the usual Time of sowing; but let this be done about the third Week in *May*. Sift over the Seeds half a Quarter of an Inch of the same Compost, and leave them to Nature. If the Season prove very dry, once in three Days sprinkle over the Bed a little of the following Water:

Boil two Gallons of Water, and put into it five Ounces of Lime, and a Quarter of an Ounce of common Salt: let it be cold, then pour it off, and mix two-thirds of common Water, and one-third of this.

When the Plants appear, repeat these Waterings a little at a Time constantly every Evening. Thus bring them to their Growth.

When they are three Parts grown, lay bare the principal Roots of two or three of them, and cut them half through, taking off a considerable Piece lengthwise to this Depth; this will shew the Pith of the Root.

Sift over this some fresh Lime Rubbish, without any Mixture; and then water them with the same Water. Thus proceed throughout the Summer.

The Plants thus raised, will naturally be weak, but they must be checked yet more in their Growth by frequent Transplantings, though it be only into other Parts of the same Bed, or tho' they be set in the same Places again. This answers the Purpose, for the Design is only to loosen the Fibres from the Mould, and thereby check the Vegetation.

The Gardener understands that by this Means all that is known of the Nature of Variegation, will be pursued regularly. The Seeds will be impregnated with those Particles which are found to produce the Distemperature in the Glands of the Plant, which brings on the Yellowness; and afterwards every Particle of Nourishment it receives, will be impregnated in the same manner.

Finally, the very Pith of the Root will be laid immediately open to the same Ingredients; and the Plant at the same Time having a poor Soil, and frequent Removals, will not by its Luxuriance prevent the Success.

In this Manner I have raised the striped Nettle from the Seeds of the striped Kind: if no more than this could be effected, it would be very well worth the Pains: for the Gardener would be very glad to raise striped Hollies from the Berries of the striped Kind; but probably by repeated Trials much more may be obtain'd.

If the Plants should be all plain the first Season, let him not for that Reason destroy them; for they will sometimes be colour'd the second, or even the third Year, though not before.

E D E N:

A

COMPLEAT BODY OF GARDENING.

NUMBER LIX.

For the End of OCTOBER.

SECTION I.

FLORA, or the PLEASURE GARDEN.

CHAP. I.

Curious Plants and Flowers now in their Perfection.

I. SINGLE HESPERIS.

Octob.
Pl. 59.
Fig. 1.

THE Garden does not afford a sweeter Flower than this; though the whole Plant has much the Aspect of a pretty Weed.

We distinguish it by the Name single, because there is a double Species, though not known by the same Name: in that State the Plant is called *Rocket*; a very ill-chosen and improper Term.

Rocket is the Name of another Plant once cultivated in Kitchen Gardens, as a Salad Herb, though little known at present; and he would be strangely misled, who from that Confusion of Names should suppose the double *Rocket* the Produce of that Plant. It is this Plant raised to Doubtless by Culture, and should be called double *Hesperis*.

In this single State the Plant has been described by all the botanical Writers. They call it *Hesperis vulgaris*, and *Hesperis hortensis*, the common and the Garden *Hesperis*. *DODONÆUS* *Viola matronalis*; and others thence, *Hesperis matronalis*. From his Name, *Viola matronalis*, came the old English Term, *Dames Violet*, applied to this Plant. *J. BAUHINE* calls it, *Hesperis flore purpureo albo & vario*: purple, white, and striped flower'd *Hesperis*; and some, *Eruca alba & purpurea*: the white and purple *Rocket*.

LINNÆUS retains the generical Name, *Hesperis*, and adds as the Distinction of this Species, Numb. LIX.

Caule simplici erecto, foliis ovato-lanceolatis, denticulatis, petalis mucrone emarginatis: Upright, simple stalk'd *Hesperis*, with oval-lanceolate Leaves, notched at the Edges; and with the Petals of the Flower nipped in with a Point. This is a long but a very expressive Name; and necessary on Account of the many other Species.

The Root is long, slender, and hung with many Fibres.

The Stalk is round, upright, lightly hairy, of a pale green, and a Yard high.

The Leaves are large and handsome: they are oblong, of a Figure between the oval and the lanceolate, and of a fresh green. They stand alternately on the Stalk, and are sharp pointed, and deeply notched at the Edges.

The Flowers are numerous, and they stand every where about the Tops of the Stalks; and of those Branches which rise from the Bosoms of the upper Leaves. They are large but simple in their Structure. Their Colour is naturally of a pale red, but they are sometimes of a deep crimson; sometimes white, and in other Plants not inelegantly spotted. The Scent is in the highest Degree fragrant, principally toward Evening, whence the *Greeks* named the Plant; for *Hesperis* has that Signification.

Each Flower is placed in a Cup formed of four little lanceolate Leaves, which converge toward

Octob.

Octob. toward their Tops, and open a little at the bottom; and two of them, which stand opposite, are prominent near the Base.

The Flower is composed of four oblong Petals with narrow Bases, and in the Centre stand six Filaments: four of these are longer than the other two; and they are crowned with narrow upright Buttons turned back at the Ends: at the Base of each of the short Filaments there is a Gland, which stands between the Filament and the Rudiment of the Fruit, and surrounds that Rudiment.

There is no Style; this Rudiment, which is oblong and squared, is crowned with a Stigma or Head of an oblong Shape, placed inward and upright, split at the Base, and close at the Top.

The Seed-vessel is long, somewhat flattened, striated, and formed of two Valves; it contains two Cells, and in each many compressed oval Seeds.

The Class of the Plant is found in the Disproportion of the Filaments, four being longer than the rest. It is that of the *Tetradynamia*, thence named; and the Fruit shews it one of the *Siliquosæ* or podded Kinds.

Culture of the single and double HESPERIS.

The *Hesperis* in this simple State is Native of all the warmer Parts of *Europe*; it has been supposed a wild *English* Plant, but probably when it has been found out of Gardens, the Seeds have been by some Accident scattered thence. Its Culture in this State is extremely easy.

The Compost should be of a Mixture of Pasture Mould and River Mud: it will grow in the common Borders, and flower very well; but the Root will not so continue good.

In such a Compost, the Seeds, ripened the preceding Season, are to be sown in the last Week of *March*. The Plants must be suffered to flower where they rise, for transplanting always hurt them; and all the Care they require, is to be thinned to two Foot Distance, and after-

wards kept weeded and watered.

Every Autumn the Roots should be taken up, reduced to a due Size, and planted again in fresh Compost. The parted Roots will increase it farther, but the propagating by Seeds is sufficiently easy, and is better.

This is all the Care required for the single Kind; and from the Seeds of this is to be raised the double. For this Purpose a large Seed Bed must be dug up in the Nursery; and the Seeds saved with Care from a flourishing Plant, must be scattered over it.

The young Plants must be thinned; and, after they have some Strength, removed to another Bed, where they must be set at six Inches Distance.

In this Bed they must flower. The inferior Kinds must be pulled up, and those which promise best must be planted out in Autumn in the Garden; but they must have such a Compost as we have directed, for they will be spoiled by the common Earth of the Borders.

They will flower the next Year in their full Perfection; and there will be some with Flowers approaching to Doubleness.

These must be marked for Seed. This must be saved with Care, and sown as the former.

From this will probably rise some perfect double Plants; if not the Process must be repeated; sowing the Seeds of the finest of these with the same Cautions.

Every Time, the Plants will be improved: no Part of the Labour will therefore be lost; and in the End there will be produced the perfect and fine double-flower'd Plants.

These will yield no Seed, therefore they must be propagated by parting the Roots. The Time for doing this is Autumn, they must be taken up every Year at that Season, and planted in a Bed of new Compost; and the parted Pieces must be planted in a Nursery Bed till they have Strength to flower perfectly, and are in a Condition to be removed into the Garden.

2. C R I M S O N P E R I W I N K L E.

Pl. 59.
Fig. 2.

There is not in the World a Shrub of greater Beauty, than this we are about to describe: it has the Advantage also of Novelty: it is unknown to the latest Writers, and but of a very few Years standing in our Collections.

It has had till now no Name: the Characters of the Flower plainly refer it to the Genus *Vinca*, the Name LINNÆUS has affixed to the Plant *Periwinkle*, heretofore called *Pervinca*; as the Flowers of the other Kinds have no Colours except blue, white, and a faint red; the Addition of Crimson will serve the Gardener for its common Distinction. For the botanical Student we may name it, *Vinca floribus corymbosis*: Cluster

flower'd Periwinkle; the Flowers of this Species naturally growing in a Cluster at the Head of the Plant, or Tops of the Branches; whereas in the others they rise from the Bosoms of the Leaves along the whole Stalk.

The Root is composed of numerous, large Fibres, connected to an oblong Head.

The Stem is woody, and covered with a brown Bark; the young Shoots are green: and the Plant in its most agreeable Form is a slight Shrub of about a Yard high.

The Leaves are placed in Pairs, and are very beautiful; they are oblong, considerably broad, undivided at the Edges, and of a firm Substance: their

Octob.

Octob. their Colour is a deep green; their Surface glossy, and their Veins whitish.

The Flowers crown all the Branches in great Tufts at their Extremities: they are large as well as numerous, and in the highest Degree elegant; they stand crowding upon one another, wide expanded, and are of a delicate crimson: and on the Back-side of a pearly white.

Each has a Cup formed of one Piece, divided into five Segments.

The Body of the Flower is formed of one Petal, tubular at the Base, and fully expanded at the Verge.

The tubular Part is longer than the Cup, cylindrick toward the Bottom, broader upwards, and marked with five Lines: it has also a pentangular Mouth.

The expanded Part is formed of five vast Segments; they are broad, obtuse, and so deeply cut down, that they resemble so many Petals; but they are united with the Top of the Tube.

The Filaments are five; they are very short, and are bent backward and forward; and they are crowned with upright, obtuse, membranaceous Buttons.

There are two Rudiments, with a roundish Gland affixed to each; and to these there is one common Style, short and cylindric. This has two Heads: the lower rounded and flat, the upper hollow.

The Seed-vessel is a double Pod; or in other Words, there follow every Flower two long Pods formed each of a single Valve, and opening longitudinally: the Seeds are numerous, oblong,

and furrowed.

The Construction of these Parts is very singular, but five Filaments and a single Style refer the Plant plainly to its Class and Place in the *Linnean* System, the *Pentandria Monogynia*, the fifth Class, and its first Section.

Culture of this PERIWINKLE.

It is a Native of *Madagascar*; and with us requires the Heat of a Stove to keep it in Perfection.

The Missionaries of *France* in that Island sent over the Seeds to the King's Garden, where it first flower'd in *Europe*: This is about three Years ago; and two or thereabouts we have known it in *England*.

The Elegance of its Flower soon made its Way hither; and Mr. HAMILTON, a Gentleman distinguished eminently in the Knowledge of Plants, first raised it here: at present it is in two or three other of our curious People's Hands, but I have seen it no where so perfect as at the Nursery Garden of Mr. LEE and KENNEDY, near *Hammer Smith*.

It requires a light rich Mould, and may be raised from Seed or Cuttings.

The Seed should be obtained from the Place where it is Native, for the *Periwinkles* are Plants which do not ripen it favourably. The Cuttings are to be managed as we have directed for the other tender Kinds; but a great deal of Care must be taken in the potting of them to preserve the Mould about their Roots.

3. JACOBÆAN LOTUS.

Pl. 59. The extream Singularity of this Plant never
Fig. 3. fails to attract the Attention at a distant View; and on a nearer Observation, there is a Peculiarity also and Beauty in the Flower, which strongly recommend it.

The old Writers did not know the Plant. The *Dutch* first raised it in 1690, from Seeds sent thither by Mynheer VANDERSTEL, Governor of their Settlement at the *Cape*, from the Island whence it is named; at which he touched on his Way thither.

COMMELINE, who first raised it in *Europe*, named it, *Lotus angustifolia flore luteo purpurascente Insulae sancti Jacobi*; but this is not expressive of the Colour, which is rather blackish.

LINNÆUS calls it, *Lotus leguminibus subternatis, caule herbaceo foliis linearibus*: upright, herbaceous Lotus with narrow Leaves, and subternate Pods.

The Root is long, divided, white, and hung with many Fibres.

The Stem is round, upright, very firm, and covered with a pale brown Bark.

The Branches are innumerable: they grow with great Irregularity: they are tough, long, slender, and of a pale green; and they send out a Multitude of young Shoots, which are round, firm, and of a whitish Colour. The whole Plant naturally forms a spreading Bush of about two Foot and a half high.

The Leaves stand at Distances upon the Stalk. Five always grow together; three of these are supported on a slender Footstalk, and the other two grow to the main Stem. They are long, narrow, sharp-pointed, and divided at the Edges; and are nearly all the Way of a Breadth.

This is what LINNÆUS expresses by the Term Linear. Their Colour is a pale greyish green; and they are of a firm Substance. In the Day-time they stand horizontally; but in the Night, the Footstalk, which supports the three, rises upward; and those Leaves also rise upward, and turn inward, embracing the lower Part of the young Shoot, which rises from their Bosom.

This Change comes on at Evening, and continues through the Night. It is what

LINNÆUS

Octob. LINNÆUS has named, the Sleep of Plants, and will be explained at large in a separate Article at the End of this Number.

The Flowers cover the whole Head of the Plant; they are small, but very conspicuous; they are collected in little Heads, usually four in each, and these are placed on long naked Footstalks; they are of the papilionaceous Form, and their Colour seen at a Distance is a dark brown, nearly black.

When examined nearer, there is seen in the Vexillum, which stands loose and single, a Tinge of yellowish; and there is between the Points of the Alæ, a small Spot of the brightest gold yellow. This is the more conspicuous from the deep Colour of the rest of the Flower; and there is a Singularity in it very pleasing.

The Student examining the Flower, will find it truly papilionaceous. Its Cup is hollow, formed of one Piece, a little swollen at the Base, and divided at the Verge into five Segments: these are narrow, and sharp pointed; and two of them form a kind of upper, and the other three a lower Lip.

The Vexillum of the Flower is oval, turned back, and hollow'd at the Base.

The Alæ are oblong and broad, and they close

in the upper Part: they are something shorter than the Vexillum. Octob.

The Carina is swelled at the Bottom, pointed at the Top, and turned upward: it is of a yellow lower brown than the rest of the Flower, and its Point is of a bright yellow. 'Tis this, which shewing itself between the Tops of the two Alæ, forms that golden Spot in the Flower.

The Filaments are ten: nine are cluster'd into one Body, and the other is separate; this shews the Plant to be one of the *Diadelphia decandria*.

Culture of this Lotus.

It is a Green-house Plant, and is best raised from Seed.

This should be sown in Spring, upon a Hot-bed, among other Kinds. When the Plants are three Inches high, they should be transplanted into Pots of some light rich Compost, and these must be set in a Hot-bed again to promote their taking root.

After this the Plants must be inured to the Air, and kept out all Summer in a warm Place; at Autumn they must be housed with the others.

They may be propagated by Cuttings, but the Way from Seed raises the finest Plants.

4. ACUTABULATED HOREHOUND.

Pl. 59.
Fig. 4.

This is a very singular Plant, distinguishable by its white Colour, and wide Cups, out of which the Flowers appear; small and inconsiderable. The Writers on Plants have long known it: they have called it from the Leaves which resemble those of the *Cretic Dittany*, *Pseudodittamnus*; and from the Cups, which when full grown, have something the Aspect of those of the *Molucca, acetabulatum*, and *Molucca simile*.

C. BAUHINE calls it, *Pseudodittamnus acetabulis moluccæ*. LINNÆUS, *Marrubium colycum limbis tubo longioribus membranaceis angulis majoribus rotundatis*: horehound, with the Verge of the Cups exceeding the tubular Part in Length, and their principal Angle rounded.

The Root is composed of many Fibres connected to a small Head.

The Stalks are numerous, rigid, hard, about a Foot high, and tolerably upright: their natural and proper Colour is purple, but they are covered with a white downy Matter, and often they are green or pale from ill Management.

The Leaves stand in Pairs, and are small, roundish, and irregularly terminated at the Edges: they are of a whitish Colour, thick covered with a woolly Matter.

The Flowers surround the Stalks in thick Clusters at all the Joints; but the Cups in which they are placed are much more conspicuous than they: these are tubular at the Base, formed of one

Piece, wide expanded at the Rim, and when full grown, very large: they are of a paler Colour than the rest of the Plant, and they have a great many Indentings at the Edge, the principal Angles of which are rounded.

The Flowers are of a pale Crimson, with some Mixture of white.

Each Flower is formed of one Petal, and is of the labiated Kind.

The opening is long and tubular. The upper Lip is undivided, upright, and hollowed. The lower Lip is broader; it is turned back, and lightly divided into three Segments: the middle one of which is broader than the other two, and is nip'd at the End.

The Filaments are four; they are placed under Cover of the upper Lip, and two are longer than the others.

The Seeds are four, and they stand naked in the Cup.

The two longer Filaments shew the Plant one of the *Didynamia*, and the naked Seeds place it among the *Gymnospermia*.

Culture of this HOREHOUND.

The Plant is a Native of the *Archipelago* Islands, and lives naturally in the Cracks of Rocks, where there is a little good Mould. This we should imitate. The best Method is by burying some Chippings



Single Hesperis



Crimson Periwinkle



Jacobean Lotus



Acetabulated Hoarhound



Double White Lilly



Ferruginous Foxglove

Octob. Chippings of Stone among a Parcel of some light and not too rich Compost.

In this Bed they may be propagated either by Seed, by parting the Roots, or by Cuttings. The Method of doing each we need not repeat, as there is nothing particular required in regard to this Plant; only the Time.

The Seeds should be sown in Autumn; the Roots are best parted early in Spring; and the

Cuttings should be planted in June. Either way the Plant should be raised originally on the Bed, where it is to remain, for it succeeds better so, than when transplanted.

The Stone in the Border is an essential Thing to its Prosperity, and the Roots never run so well among this, as when they are originally produced there.

Octob.

5. DOUBLE WHITE LILLY.

Pl. 59.
Fig. 5.

If Singularity did not often stand in the Place of Excellence with the Gardener, we should not recommend this Plant to his Attention. In all other Kinds the doubling of the Flowers is an Advantage, but in this it is rather an Imperfection.

The Petals are continued in an irregular Succession one above another, and there is more the Appearance of its having been occasioned by the Puncture of an Insect vitiating the Juices of the Plant, and producing monstrous Forms, as in the Burr of the Briar, than of its having arisen from Culture.

Under these Disadvantages, however, there is Variety in it; and tho' we would by no means advise that it should take the Place of the common white Lilly in Gardens, yet we do not think it improper to be intermixed with it.

The whole Plant, except in the Flower, resembles the common white Lilly.

The Root is scaly, and forms a large Bulb.

The Stalk is a Yard high.

The Leaves are long, moderately broad, and waved at their Edges; and the Flowers crown the Divisions of the Stalk at the Top; and the Shoots which rise from the Bosoms of the upper Leaves. They are long and irregular, white as in the common Lilly, but composed of more numerous Petals; and as they are less beautiful, they are also less fragrant.

Culture of this LILLY.

We have observed that this is only a Variety of the common white Lilly; it is entitled there-

fore to no specific Name, or farther Distinction. It has been raised in our Gardens, and no Soil suits it better than the common Mould of the Borders. The original Production of it must be from Seed; but after it is once obtained, the Propagation and Increase will be easy from Off-sets of the Root, taken away at the Time of removing it after flowering.

We have observed, that the best Chance for raising double Flowers from the Seed of the single, is by allowing a large Seed-bed, and sowing a sufficient Quantity.

This must be repeated a second and a third Time, if it do not succeed the first, and the Labour is never lost: for if the double Flower is not produced, there will be always remarkably fine Plants of the common Kind from such sowing; and the striped Lilly we have named before, will rise among them.

When by repeated Sowings the expected Kind is produced, it should be nursed with Care for the Production of Off-sets; it should be allowed a good Soil, a great deal of Room, and frequent Waterings; and it should not be suffered to exhaust itself in flowering.

At the End of this Time it must be taken up; and the Off-sets being removed, must be planted at ten Inches Distance, in a Nursery-bed, to gain Strength; and when they are fit for flowering, they are to be taken into the Garden.

6. FERRUGINEOUS FOXGLOVE.

Pl. 59.
Fig. 6.

There requires some Taste to enter into the Merit of this Plant; for Colour is greatly against it: but the upright Robustness of the Stem, the Height of the Plant, its cluster'd Leaves, and above all, its long Spike of thick-set Flowers, truly demand Attention.

The Flowers have also a Colour peculiar to themselves, that of a rusty Iron, and this is another Character of Singularity in their Favour.

All the Writers on Botany have described the

N^o 59.

Plant, and all with particular Regard, though few of them with Praise. C. BAUHINE calls it, *Digitalis angustifolia, flore ferrugine*: narrow-leav'd Foxglove, with an Iron colour'd Flower. VAN ROYEN, *Digitalis foliis calycinis ovatis, obtusis*: Foxglove, with the Leaves of the Cup oval and obtuse: and LINNÆUS adds to that Distinction, *Corollæ labio inferiore, longitudine, floris*: Foxglove, with the Leaves of the Cup oval, and obtuse, and with the lower Lip of the

8 Q

Length

Octob. Length of the Flower : this is a distinctive and perfectly peculiar Character.

The Root is a thick Head, with innumerable long Fibres.

The Stalk is five Foot high, rounded, but lightly ridged, and of a dusky green.

The Leaves are long, narrow, somewhat hollow'd, and extremely numerous : they are placed very close, but irregularly on the Stalks ; and their Colour is a dull green.

The Flowers are placed as thick as they can stand, in a Spike of near a Yard in Length, and they gape open. Their Colour is that of rusty Iron, a yellowish or redish brown, and they are of considerable Duration.

The Cup is cut deep into five Segments, the upper one of which is narrower than the others.

The Flower itself is formed of one Petal ; it is tubular in the lower Part, and divided at the Verge into two Lips.

The Filaments are four ; they are inserted into the Base of the Flower, and two are longer than the others ; they are crown'd with Buttons divided into two Parts, and pointed at one End.

The Style is single, and the Seeds are contained in an oval Capsule. The Class and Place of the Plant are easily known from this. The two longer Filaments place it among the *Didynamia*, and the Subdivision of those Plants is formed upon the Condition of the Seeds, which in this are covered ; it is therefore referred to the *Angiospermia*.

Culture of this FOXGLOVE.

It is a Native of the warmer Parts of *Europe*, and the East ; but lives very well throughout the Year in our Gardens. We should, however, have so much Regard to its native Climate, as to chuse a warm Spot of the Nursery for its Propagation ; and a sheltered Part of the Garden for it to flower.

Let the Seeds be saved from a robust and large Plant ; and when they have been carefully dry'd and harden'd upon a paper'd Shelf, let them be put up in Bags, in small Quantities, and hung up for the Winter.

In the *March* following let a Bed be dug up in a warm Part of the Nursery, and the Seeds scattered on with an even hand, not too thick.

The common Mould of the Seminary will an-

swer for this Purpose, for they will rot in too rich a Soil. Octob.

When the Plants come up let them be thin'd, and the Bed carefully weeded and refreshed at Times with a little Water.

When the Plants are four Inches high, let a new Bed be dug up for them in a near Part of the Nursery ; and in the Evening of a cloudy Day, let them be taken up and planted in this at seven Inches Distance.

Let the Bed be divided by Lines at this Distance, and the young Plants be taken up with a good Quantity of their original Mould.

Let them be planted in the new Bed with Care, and particular Regard had to the preserving the upright Straitness of the Stalk ; because on that a great Part of the Beauty of the Plant will depend.

Let them be watered in their new Bed as soon as planted, and shaded by a Reed-hedge or Mat till they have taken Root. After this let the Bed be constantly and carefully weeded, and the Plants kept in a State of free Growth by frequent but moderate Waterings.

In Autumn let them be removed into the Places where they are to flower, opening large Holes for them ; the best Compost is a Mixture of equal Parts, of Garden Mould, and dry Pasture Earth.

Let them be set upright in this, with a good Ball of their own Earth, and tied up to short firm Stakes to secure their upright Growth.

They will flower very boldly, and the finest of them should be permitted to ripen Seeds. It is with these, as many other of the hardy fibrous rooted *European* Kinds, they may be made either biennial or perennial, at the Pleasure of the Gardener.

If they be suffered to stand and ripen the vast Quantity of Seed which naturally follows that great Number of Flowers, the Root becomes quite exhausted, and the Plant dies ; but if the Stalk be cut down before the Flowers fade, the Root will continue strong for several Years.

Therefore let the Gardener save some Seed from one Plant every Year, and let that be the tallest and stoutest of all ; and let him cut down the others as soon as they are past their Beauty. From the Seeds thus saved from the best Plants, and sowed every Year, he will have an improved Kind ; and from the others, whose Stalks be cut down, a large Increase by parted Roots.

Octob.

Octob.

S E C T. II.

Of the Sleep of PLANTS.

THE nightly Change of Posture in the Leaves of the Lotus, described in this Number, is one of the many Instances of what is called the Sleep of Plants. This I have explained in a separate Treatise * at large, on the following Principles:

That the Leaves of certain Plants assume at Night a Disposition different from that of the Day, has been long known: ACOSTA records it of the Tamarind; ALPINUS of that Tree, and of the Abrus; *Glycine foliis pinnatis conjugatis, pinnis ovatis oblongis, obtusis*; and from these, all who followed: ALPINUS extends the Observation to several other of the *Egyptian* Kinds; and LINNÆUS has carried it much farther among the *European*.

ALPINUS conceived it a Provision of Nature for the Defence of the nobler Parts, the Flowers and Fruit: and he particularly observes of the Tamarind, that its Leaves embrace the tender Pods.

This Opinion RAY disclaimed, though he allowed the Fact: but LINNÆUS has adopted it. I think it will appear, upon a strict Examination, that the Change itself is a natural Effect, resulting from the common Properties of Bodies, and their Operations upon one another; and that the Author of Nature has in many Instances, made it effectual to that great Purpose; though in others it happens equally, without answering any such End.

We see how far the Observations of earlier Writers carried the Discovery; how much farther LINNÆUS: and I persuade myself the Reader will accompany me with Satisfaction in a more deep Research.

LINNÆUS has deserved greatly of the World in this and other Instances, by tracing Nature's Steps, and recording those Observations. To relate these Facts is to give the History of Nature: but there is something more within our Reach. The human Mind, daring, tho' weak, and inquisitive under all its Limitations, seeks (and sometimes not unhappily) their Causes.

There have not been wanting from the Time when this Property in Vegetables was first regarded, some who have sought its Origin; tho' all yet unsuccessfully. Those who supposed it the Effect of Heat and Cold, might for a long Time seem to have judged rightly; but when we find the same Thing happen with equal Regularity in

Stoves, where there is no Change in the Temperature of the Air, we are convinced that Opinion cannot be just.

They were as far from Truth, who supposed the Health or Sickness of the Plant of any Consequence in this Respect; nor can I affirm, that I have found Nature in all Instances confirm LINNÆUS's Observation, that it is more obvious in young Plants than old.

It will appear from the following Trials, that the sleeping and sensitive Plants are naturally allied; that their Motions, tho' differently brought on, are dependent on the same Principle; that many of the Sleepers approach to the Quality of the Sensitive; and that all the Sensitive have theirs.

This will shew the Subjects are connected, and the following Experiments will prove, that, with this Connection, the Principle of their Motion is also found.

If we can close the Abrus Leaves at Noon-day, and open them again at Pleasure, the World will own, we know the Principle of their Change of Position.

If we can throw down, as well as close the Leaves of the sensitive Plant, without a Touch, by removing the Power which keeps them erect, and expanded, it will be acknowledged the latent Principle of their Motion is also understood.

We always know the Cause of those Effects we can ourselves produce; and Experiments are the true Test of reasoning.

We see a great Number of Plants close their Leaves at Evening. The Fact is as obvious as it is strange: but we know every Effect has its Cause; and we are to seek this, not by vague Conjecture; but in the established Properties of Bodies, and their known Influence in different Cases, upon one another.

The Structure of Plants we may easily know; and of no Part more perfectly than of the Leaves: for a good Microscope shews their smallest Fibres.

Between the two Skins of the Leaf, which are Continuations of the outer Rind of the Stalk, there run innumerable Fibres of a larger Kind; with Clusters of more minute ones, in various Forms among them.

The larger Vessels are of a woody Substance, hollow, and smaller all the Way from the Base of the Leaf: they are collected together in a compact

* *Sleep of Plants explained*, a Pamphlet lately published.

Octob. Manner in the Footstalk ; with delicate Clusters at its Base : and they are originally sent from the Pith within the Stem.

These Fibres serve to support the Leaf in its proper Position ; and therefore whatever external or internal Cause affects them, will change that Position.

This is the Construction of the Part to be influenced ; the Question remains, what it is that affects it ; and to know that we are to examine whatever may have such Power.

Leaves thus constructed are always surrounded by the Air ; and they are occasionally and variously influenced by Heat, Light, and Moisture : the Air also itself being in a continual State of Variation, its Alterations are to be considered as possible subordinate Causes of Change.

These Things, and these only, come within Contact of Plants, or within the Sphere of Influence. Bodies do not affect Bodies, but on Contact, or within that Sphere : therefore the Cause of the Change of Position in Leaves, is to be sought among these Agents, and no other.

They are naturally complicated, and they act on most Occasions together. We are therefore to observe, first, what Effects result from their mutual Combinations in a State of Nature : and having assigned in these Cases the Effect to the proper and particular Cause, from this Power of that Agent, whichever it is, that acts thus in Concert with the rest, we may deduce its Operations singly.

Pinnated Leaves, such as are composed of numerous Lobes, or smaller Leaves placed on a common Foot-stalk, are most remarkable for their Change of Position : it will be therefore best to wave all other Considerations here ; and observe solely the Condition of these.

The four Agents we have named are universal ; but we shall find their Operation differs in various Climates. In these temperate Kingdoms, our native Plants which have pinnated Leaves, naturally hold the Lobes nearly horizontal, and shew but a moderate Sensibility in this Respect : in the hotter Regions, the usual Position of the Lobes in these Plants is turning upwards, and they are extremely susceptible of Change of Posture ; in *Agypt* most of all : in the more Northern Nations, on the contrary, they scarce ever reach an horizontal Position, and they shew very little Change on any Occasion.

As we see different Appearances in these Parts of Plants in hot, temperate, and cold Climates ; Observations of a like Kind shew, they are not less variously affected in the same Kingdom in rainy and fair Seasons. In those Places where there are regular Periods of rainy Weather, the Change in the Face of the pinnated Plants is very great, and certain : those which in the fair Months carry their Lobes in an obtuse Angle upwards, constantly hang them obtusely downward in the Time of the Rains.

These are the Observations of curious Voyagers ; and they have been confirmed by the immediate Notice of Botanists in those Places. The first would seem at once to give the Effect to Heat ; and the other to Moisture : but farther Observation shews it is otherwise. LINNÆUS has justly observed, that the same Thing happens to Plants in the Stove, where there is no Alteration in Point of Heat ; and I have found by careful Tryal, that Moisture has in the same Respect no Effect. I have for this Purpose watered some Plants almost to Destruction, and left others of the same Kind dry ; and no Alteration has been made by this : they all expand, or raise their Leaves in the Morning, and drop them in the Evening ; at the same Hour and in the same Degree.

Two of the four natural Agents, Heat and Moisture, are therefore excluded from any Share in this Effect : the Air is too universal, and its Changes too much depend on these to be admitted in the Research. The Attention therefore falls on Light alone : and I have found by many Experiments, that the Change of Position in the Leaves of Plants at different Periods of the Day and Night, is owing to this Agent and no other. This is the Discovery I persuade myself I have made ; and I shall endeavour to shew, that it is founded on Reason, and supported by Experiments.

Nor is there any thing strange in this Effect, when duly examined. By excluding the supposed Causes, we have discovered the real, for there remained no other : and in examining the Subject, on the Principles here laid down, we shall find not only that no other Power could produce the Effect ; but that Light inevitably must.

These are the Discoveries on which the everlasting Seal of Truth is stamped ; which Reason dictates ; and which Experiments confirm.

We have proposed to search the latent Principle of this Change in the Qualities of Bodies, and their natural Operations upon one another.

We have shewn what is the Structure of Leaves in general : and it will now be proper to fix on some in particular : let us chuse for this Purpose an *Agyptian* Plant, since those shew the Effect most of all ; and among these none can be more proper than the *Abrus*, celebrated for it by the earlier Writers.

The Leaf of the *Abrus* consists of thirteen Pairs of Lobes, fixed by very short and extremely slender Footstalks to the middle Rib ; and this to the main Stem of the Plant.

Examining its internal Structure by the Microscope, we find a Number of delicate Fibres, rising from the central Part of the main Stem, and continued in a Course obliquely upwards, through the intermediate Parts, and to the Outside of the Rind. Here they swell ; and run into several regular Clusters, spreading downward and on each Side : and these form (under the continued Covering of the Stem) the Base of the common Footstalk, or middle Rib of the Leaf.

From

Octob. From this Part they are carried in a small compacted Bundle, strait forward to the Extremity of the Rib; and there, as there is no odd Lobe to close the Leaf, they terminate in a Point, covered by the common Integuments.

From each Side of this middle Rib rise the Footstalks of the separate Lobes. These are formed of a Multitude of delicate Vessels, ranged close together, and are confined by the Covering, which is the common Rind of the Plant continued to that Part.

At the Base of each Lobe there is another complex Cluster of Fibres: from this Part they are protended forward, strait to the End of the Lobe; and they send out only slight Branches into the several Parts of the Leaf

This is the particular Structure of the *Abrus* Leaf, as seen upon a careful Dissection, and with a good Microscope: it agrees with the general Construction we have given before, as the common Course of Nature in these Parts; and it will regularly explain the Change of Posture in the Lobes, under the different Influence of Light.

Light is subtle, active, and penetrating: by the Smallness of its constituent Parts, it is capable of entering Bodies; and by the Violence of its Motion, of producing great Effects and Changes in them. These are not permanent, because those Rays which occasion them are, in that Action, extinguished, and lost.

Bodies may act on Light without Contact; for the Rays will be reflected when they come extremely near; but Light can act on Bodies only by Contact; and in that Contact the Rays are lost.

The Change produced in the Position of the Leaves of Plants by Light, is the Result of a Motion occasioned by its Rays among their Fibres: to excite this Motion, the Light must touch those Fibres; and where Light touches, it adheres, and becomes immediately extinguished.

These are the everlasting and invariable Properties of Light: and, according to these, the Change we attribute to it, being once effected, must be continued as naturally and as necessarily as it began, so long as the Light continues; and no longer.

The raising of the Lobes in these Leaves will be owing to the Power of those Rays which at any one Instant fall upon them: these become extinguished; but others immediately succeed to them, so long as the Air in which the Plant stands, is enlightened. It ought therefore to be seen, that in full Light, the Lobes continue in their most raised Position; and that they droop from that in Proportion as the Light becomes less.

This which appears necessary from the Powers of Light, and the Construction of Leaves, is true also in Fact.

We have seen that the Footstalks of these Lobes, are Clusters of Fibres protended from the Center of the Stem; that they are con-

Octob. tinued through the Lobes; and that they support them in their Position, whatsoever it is.

The Effect of Light upon these Fibres is, the putting them into an incessant Vibration: this happens necessarily from the continual Impulsion and Extinction of the Corpuscles, of which Light is composed, and the fresh Impulsion of others, upon the Extinction of the first.

It cannot be, but that a Cluster of delicate Fibres, affected incessantly by these Concussions, must be put into a vibrating Motion; and this will be greater, as the Light is more, and weaker as it is less.

This Vibration is simple in the expanded Fibres; but it operates as variously as distinguishably on those Clusters of them, which are placed at the Bases of the main Rib, and of the several Footstalks of the Lobes.

It is on the Operation of Light upon these interwoven Clusters of Fibres, that the Motion of the Leaves in gaining their different Position depends; and consequently, the Motion itself is various, according to the Construction of those Clusters.

The Effect of Light upon Bodies we see is to put their Parts into a vibrating Motion; the Construction of pinnated Leaves is such as naturally admits and propagates that Influence; and the Clusters of Fibres are as a Kind of Joints on which their Lobes are capable, under the Influence of Light, of a certain limited Motion.

As the State of Water uninfluenced by Heat is Ice, the natural Position of the Lobes in these pinnated Leaves is drooping. This is their Posture of Repose; but in this they were not intended by the Author of Nature to remain; for Vegetation is very imperfectly performed, while they are in it. The Effect of Light is this Vibration, and the Alteration of Position in those Lobes. This is the Doctrine here advanced, and this is supported by the following Experiments.

I removed a Plant of the *Abrus* from a Stove, in the Evening of the seventh of August, and placed it in my Study, where it could have the Effect of moderate Day-light, without being exposed to the immediate Action of the Sun.

This might be conceived the most natural and equable Degree of Light; and therefore fittest for the first Experiments.

The Lobes of the Leaves were at Evening, when the Plant was brought in, fallen perpendicularly from the middle Rib, and closed together by their under Sides.

Thus they continued during the Night; in a State of perfect Repose. Half an Hour after Day-break they began to separate; and in a Quarter of an Hour after Sun-rise stood horizontally; flat, and perfectly expanded. Long before Sun-set they began to droop again; and toward the Evening they were closed underneath, as at first.

Next Day the Plant was set in a Room,
8 R where

Octob. where there was less Light. The Lobes were raised in the Morning; but not to a horizontal Situation: and they drooped earlier at Evening.

The third Day it was set in a South Window, open to the full Sun. Early in the Morning the Leaves had attained their horizontal Situation; by nine o'Clock they were raised considerably; and they continued in this State till toward Evening, when they by Degrees fell to the horizontal Situation; and from that drooped gradually to the usual State of Rest.

The fourth Day the Plant stood in the same Place, but the Sun did not appear. The Lobes obtained early their horizontal Situation, but did not rise beyond it; and in the Evening they closed as usually, below.

These Experiments shew the Effects of various Degrees of Light; at the same Time, that they prove the whole Change to be occasioned by Light only.

The Effect of moderate Light, that is, the Light of a bright Day out of the Sun-shine, is to raise the Lobes to an horizontal Position: less than this places them at an obtuse Angle downward: more at an obtuse Angle upwards.

The fifth Day the Plant was set in a less enlightened Room: and the Leaves had obtained by nine o'Clock their Position at an obtuse Angle downward: it was then brought into the lighter Room, and they rose to the horizontal Situation in a Quarter of an Hour. It was after this removed to the Window, where the Sun shone, and the Lobes were elevated as before: and being thence carried into the less light Room, they drooped again. All these Changes were produced between the Hours of nine and two; the Weather being the same, and only the Place of the Plant changed.

On the sixth Day it remained in moderate Light; and kept its Leaves horizontal.

On the seventh I made the final Experiment.

It appeared to me that if Light were the sole Cause of the Motion, and Change of Position in the Leaves, then denying the Plant the Benefit of Light at any Time, must bring on that Change: that it would not be difficult to darken the Place where the Plant stood, at any Time: and that the Consequence of this must be, if the Principles already laid down were true, a bringing on of the Change at any Time of the Day. This Experiment appeared as a just Proof of the foregoing Reasonings. If Darkness would at any Time throw down the Lobes, the System of that Motion before delivered must be true; if not, all the Reasonings must be false.

The Assent of the World must also depend on this: Deductions of Reason may be disputed, but it will be allowed certainly, that we understand the Cause of a Change which we can produce.

In the Evening of the sixth Day I set the Plant in a Book-case, on which the Morning-

Sun shines; and throwing open the Doors, left the whole to Nature. The succeeding Day was bright. The Lobes which had met in their drooping Position at Evening, and continued so during the Night: began to open early in the Morning, and by Nine o'Clock they had passed their horizontal Situation, and were elevated in the usual Manner.

I then shut the Doors of the Bookcase: the Plant was by this left in Darkness; and on opening them an Hour afterwards, the full Change had happened; the Lobes were all drop'd, and it was in the same State that it would have shewn at Midnight.

On the opening of the Doors the Change began very soon: and in twenty Minutes the Lobes had obtained their elevated Situation. This Experiment I have since many Times repeated, and always with the same Success.

It is in our Power therefore to bring on this State of Repose at Pleasure; and by the Admission or Exclusion of Light, to make the Plant at our own Time, put on all its Changes, from the drooping to the most elevated Position of the Lobes.

We know that in these Experiments, Light alone is the Cause: we are therefore certain, that what is called the Sleep of Plants, is the Effect of the Absence of Light alone, and that their various intermediate States are owing to its different Degrees.

This being explained, a second Discovery follows naturally. The Motion of the sensitive Plant, at the Cause of which no Philosopher has hitherto ventured a Conjecture, is in a great measure owing to the same Principles: and the Explanation of it, which before the Effect of Light upon the Leaves of Plants was thus shewn, must have been enveloped in impenetrable Obscurity, may now be regularly pursued.

The sensitive Plant, beside its singular Quality of closing and dropping its Leaves upon the Touch, is subject to the same Changes with the Abrus, and those other Kinds, we have named from the Effect of Light.

Plants which suffer this Change from the Effect of Light, may, though they do not universally, shew it also from Motion; and all Plants which are capable of it by Motion, suffer it also from the Absence of Light.

Light gives their Leaves that Position, from which they are to be thrown by a Touch: and the Absence of Light takes the same Effect with that Touch; though in a slower manner.

The sensitive Plant at Noon Day, has its Leaves raised and expanded. The Footstalks make an acute Angle with the main Stem, and the two Leaves which grow on each of the first or lower ones, stand remote from one another. The Lobes which compose these, are about twelve Pair to each, and these also stand in an horizontal Direction.

Thus the young Plant appears in the middle Hours of Day. At the Approach of Evening, the

Octob. the Lobes begin to draw themselves together upwards, as in the *Parkinsonia*; and the middle Rib of each approaches toward the other: at Night the Lobes are as entirely shut upwards, as those of the *Abrus* downwards: the two Ribs are placed close to each other, and the Footstalk which supports them both, hangs down.

This is the State of Repose of the sensitive Plant: into this it falls every Night naturally; and into this it may, in the same Manner as the *Abrus*, be thrown at Noon Day in a darken'd Place.

As we have seen the Cause of this Change in the *Abrus*, to be Light, and have traced the Manner of its Operation; it is easy to follow it also in the sensitive Plant, through the same Course of Enquiry.

At the Base of the Footstalk, where it joins the main Stem, there is a Cluster of complex Fibres: these have risen from the medullary Part, and pierced the woody Sides of the Stem.

From this complex Cluster, the Fibres proceed in a strait Line up the Footstalk, till at the Head of that, where the two Leaves rise, there is another such Cluster: thence the Fibres run strait the Length of the main Ribs, and send out on each Side other Clusters at the Base of every Lobe. From these the more minute Fibres run strait through the Leaf, and send out lateral Shoots.

This the Microscope discovers plainly, and this shews that not only the natural Motions of the sensitive Plant, are the same with those of the *Abrus* and others; but that the Construction also is the same in its Kind; though more complex.

In the Night the sensitive Plant is not capable of the common Motion on the Touch, for the Leaves are already in the Condition where-to they would be reduced by it. In the Day they rise and spread: and 'tis then the strange Effect appears on touching them.

Light expands the Lobes, separates the Ribs, and raises the Footstalks. It does this, by putting all the Parts of them in a vibrating Motion. This we have seen in the *Abrus*, is principally effected by means of those Clusters of Fibres which are placed at the Bases of the Footstalks. In this Plant, as there are no less than three Sets of those Clusters, the Effects of the same Principle are naturally much greater than in the *Abrus*, where there is only one.

The Vibration of the Parts is that which keeps the Leaves of the sensitive Plant in their expanded and elevated State: this is owing to a delicate Motion continued through every Fibre of them. When we touch the Leaf, we give it another Motion more violent than the first: this overcomes the first: the Vibration is stopped by the rude Shock; and the Leaves close, and their Footstalks fall, because that vibrating Motion is destroyed, which kept them elevated and expanded.

That the Power of Motion in the sensitive Plant depends upon the Effect of Light on the

expanded Surface of the Leaves, is certain; for till they are expanded, they have no such Power. The young Leaves, even when grown to half an Inch in Length, have no Motion on the Touch, though rough and sudden.

To propagate the Motion when the Leaves are in a State to shew it, there requires a perfect and confirmed State of those Clusters of Fibres lodged at their Base. This is evident: for when the young Leaf has first come into the State of Vibration, a Touch will make its Lobes close; but the Effect is not continued down the Footstalk, till it is more confirmed. No shock on the young Leaf will affect the Footstalk before it is expanded: hence the Clusters of Fibres at the Bases of the Lobes first acquire their due Condition for Motion, and afterwards those at the Head of the main Footstalk.

As there requires a due Firmness to give the Clusters of Fibres this Susceptibility of Motion, and Power of propagating it farther, there needs also a Concurrence of favouring Circumstances, to preserve them in that delicate State wherein they are capable of exerting these Powers.

The cold Air hardens the Fibres, and impairs their Power of Motion. The sensitive Plant becomes more languid in this Respect, when removed out of the Stove.

The Correspondence between this Motion, and what LINNÆUS has called the Sleep of Plants, or their natural closing of their Leaves at Night, appears also in this Instance: for as the sensitive by being removed out of the Stove, loses in some degree the Quality of closing its Leaves on the Touch, the Tamarind by the same Change loses in great part its Quality of closing the Leaves at Evening. This is probably owing to the Juices stagnating in the Clusters of Fibres, and to the Contraction of the Bark by Cold.

The Communication of Motion is less from the Lobes to the Footstalk; and greater from the Footstalk to them. The greatest Shock is given to the Plant by a rude Touch of the Stem: but even this does not affect the unexpanded or young Leaves.

The Analogy between the Effect of a sudden Motion, and of the Absence of Light, is confirmed also by this; for as Light decays naturally at Evening, or artificially by shutting up the Plant, the Lobes first close, and the Footstalks afterwards fall.

The Power of absolute Darkness is greater on the sensitive Plant, than that of the rudest Touch. The rudest Touch will only cause the Lobes of the separate Leaves to close, and the Footstalks to hang down: the two Leaves will remain far asunder. The Effect of absolute Darkness exceeds this; for the two Leaves close also absolutely together, and it appears as if the Footstalk supported only one. This proves that the Expansion of those Parts depends solely upon the Effect of Light; and that although it may be disturbed by a superadded and ruder Motion,

Octob. tion, yet it can be taken away absolutely only by Darknefs; by the Defect of that to which alone it was owing.

These Experiments every one may easily repeat: the Observations will be familiarly made by any who have Stoves: they are constant and invariable, and the Conclusions from them are certain; for no other Cause intervenes.

The Effect of Light is continual while the Light continues. The Plant therefore whose Leaves have been thrown down, and closed by this rude Shock, is immediately affected by the Light, as at its first Appearance in the Morning, or as on its Admission, when the Leaves had been closed by artificial Darknefs. The Vibration begins; and if the Light be at its full Strength, the Expansion and Elevation of the Lobes is so quick, that one may almost look upon the Plant and see it. A few Minutes often perfects it.

That the Touch of the Leaves no other way affects them than by a Motion greater than their own internal Vibration, is plain from this, that if they be touched with a Finger in so deliberate and gentle a manner as not to move them, no Effect is produced: and, on the other hand, if they be any other Way moved, the full Effect follows.

If the Pot be shook, though no part of the Plant be touched, the Leaves close, and their Footstalks fall: or if the Wind blow them, the Effect is the same.

Hence it is certain that the Expansion of the Lobes, and Elevation of the Footstalks in these pinnated Plants, is occasioned solely by that vibrating Motion, in which their Parts are kept by the continual Impulses of Light: and consequently, that in all of them they collapse or sink on the Absence of Light; and in the more delicate Kinds upon the Shock of any ruder Motion, which for the present stops that Vibration.

Hence also the different Appearance of pinnated Leaves in various Climates is understood; and may be assigned to its true Cause, which is the different Degree of Light.

In the brighter Regions the Lobes are expanded, not because of the Heat, but because the Light is strong: in the northern Kingdoms they droop, not from Cold, but because the Air is less enlightened: in the rainy Seasons they also droop, but it is not from the Moisture, but the Darknefs of the Weather; and in *Egypt* they are

most raised of all, not because it never rains, but because the Light is constant. Octob.

The Abrus placed in a south window perfectly shews this; for the Expansion and Elevation of its Leaves is proportioned always to the Degree of Light, and consequently it is affected by the cloudy or clear Weather, though the Plant remain in the same Place.

The Lobes begin to rise before the Sun is above the Horizon, because the Air is enlightened in a proportioned Degree; and they begin to close again long before it sets, because in the South Window the Shadow of the Building darkens the Air about them.

In rainy Weather the Leaves wear the same Appearance they would in a Plant native of a Country where there are Seasons of Rain; they never at any Time of the Day reach the horizontal Position, and they droop much earlier in the Afternoon, and begin to expand much later in the Morning.

The sensitive Plant which in these Experiments was placed near the Abrus, was affected in the same Manner: and by repeated and careful Examination, I have always found, that in both these and in all others, the Degree of Elevation, or Expansion in the Lobes, is exactly proportioned to the Quantity of Light; as it is solely dependent on it.

When the sensitive has been kept out of a Stove some Days, and has lost some part of its Power of Motion, if the Leaf be touched softly, and the Force increased gradually, it will bear a great deal without drawing up the Lobes; but at the same Time a much less Pressure given with a sudden Stroke, will occasion their closing.

In this manner we may also trace the Extent and Progress of the Motion according to the Force; a slighter Shock raising only the Lobes that are touched, a harder the opposite ones, and so the whole.

This Quality in the Leaves of Plants, as their general Structure is the same, and the same Agent operates universally, ought to be found in all: though in various Degrees, according to the Construction of their Parts. In this, as all the preceding Instances, just Observation confirms the Principles deduced from Reason. In some it is greater, in others less: in many obvious to the common Eye, in others difficultly perceived by the most accurate; but on a strict and close Examination, I have not found any Plant or Tree wholly unaffected by it.

E D E N :

A

COMPLEAT BODY of GARDENING.

NUMBER LX.

For the last Week in OCTOBER.

SECTION I.

FLORA, or the PLEASURE-GARDEN.

CHAP. I.

Flowers and Curious Plants now in their Perfection.

1. WHITE INDIAN HELIOTROPE.

Octob. **T**HE general Aspect of this Plant never fails
Pl. 60. to command the Attention of the Cu-
Fig. 1. rious, though it has nothing of the
Appearance of a Flower.

The old Writers could not know it, for 'tis Native only of the *West-Indies*; but all who have written on the Plants of that Part of the World, have mentioned it. Sir HANS SLOAN calls it, *Heliotropium maritimum minus folio glauco flore albo*: Glaucous-leav'd, white-flower'd, small Sea *Heliotrope*.

LINNÆUS, *Heliotropium foliis lanceolato-linearibus glabris aveniis spicis conjugatis*: narrow-leav'd *Heliotrope* with conjugate Spikes, and smooth veinless Leaves.

The Root is composed of numerous white Fibres connected to a small Head.

The Stalk is round, smooth, of a greyish green, and ten Inches high.

The Leaves stand in Pairs; and they are oblong, narrow, undivided at the Edges, obtuse, smooth, fleshy, and of a blueish green.

The Flowers terminate the Stalk in a double Spike, turning down and curling back each Way; and numerous others rise from the Bosoms of the Leaves. They are small, white; and at Evening have a very fragrant Scent.

Each has its little Cup, form'd of one Leaf tubular at the Base, and cut into five small Segments at the Edge.

The Flower is formed of one Petal: this is tubular at the Base, and at the Rim is cut into five obtuse Segments; and the opening at the Top of the Tube is covered by five convergent Scales.

The Filaments are five; they are very short, they stand in the Mouth of the Flower, and have small covered Buttons.

The Style is single, and four naked Seeds follow: the Cup is their only Defence.

The five Filaments and single Style refer this to the *Pentandria Monogynia* of LINNÆUS, his fifth Class and its first Section.

Culture of this HELIOTROPE.

It is a Native of the warmer Parts of the *West Indies*, and lives on the sandy Shores an Annual.

This directs our Culture. Let Seeds be procured from its native Country, and sown in a Pot of some light Compost, mixed with one third Part Sand, and wetted with a little Brine.

Let the Pot be set up to the Rim in a Bark Bed; and when the young Plants are three Inches high, let them be transplanted into separate Pots. They must be watered and shaded till they have taken Root, and afterwards brought into the Stove. They will ripen Seeds here with good Management: but the best Plants are produced from those brought from the native Place.

2. VIRGINIAN PULMONARIA.

Pl. 60. This is a very delicate and pretty Plant;
Fig. 2. unlike its *European* Kindred, for they are robust and rough, but superior to them all in Beauty.

Till the Discovery of *America*, it could not be known to the botanical Writers, for it is not Native any where else; but since that Time most have named it. MORISON calls it, *Symphitum sive pulmonaria non maculata foliis glabris acuminatis flore patulo caruleo*, a Name first given it by PLUKENET.

Numb. LX.

LINNÆUS, more correctly, *Pulmonaria calycibus abbreviatis foliis lanceolatis obtusiusculis*: obtuse lanceolate-leav'd *Pulmonaria* with short Cups.

The Root is long, and hung with many Fibres.

The first Leaves are broad, oblong, and smooth, they rise without Footstalks, and are of a very fine green.

The Stalk is eight Inches high, and is tender, and of a pale green.

The Leaves stand alternately upon it, and
8 S they

Octob. they have no Footstalks; they are narrower than those from the Root, oblong, and waved lightly at the Edges, broadest toward the middle, and obtuse.

The Flowers are numerous, they form a hand some Head upon the Summit of the Stalk, and each has its separate very slender Footstalk. They are large, and of a delicate blue, with some Tinge of purplish.

Each stands in a small Cup, formed of one Leaf, and cut into five light Segments.

The Body of the Flower is formed of one Petal; it is long, hollow, and widens from the Base to the Rim, where it is cut lightly into five Segments, and the Mouth is perfectly open.

The Filaments are five, they are very short, and they have upright convergent Buttons.

The Style is single, and the Flower is followed

by four naked Seeds.

The five Filaments and single Style refer this to the *Pentandria Monogynia* of LINNÆUS.

Culture of this PULMONARIA.

It is a Native of *Virginia*, where it thrives best in a loose dry Soil. With us it lives perfectly well throughout the Year in the open Borders, and is easily propagated by parting the Roots at Autumn.

The first Stock is best raised from Seed, which ripens very well here, and should be sown in *September* in a Nursery-bed. From thence the young Plants should be removed the following *April* to the Places where they are to remain.

Every Year they should be taken up and planted again in some fresh Mould. The best Season for this is early in Spring.

3. INDIAN BORAGE.

Pl. 60. This is one of the *East Indian* Herbs which differ so extremely from the *European* Kinds of the same Genera, that we cannot wonder Writers who saw the Plants imperfect, or judged of them imperfectly, referred them to wrong Kinds. ISNARD has named this *Cynoglossoides*; and PLUKENET, more sensible of his not seeing the true Character, refers it to no Genus, but calls it, *Anchusæ degeneris facie Indiæ Orientalis herba quadricapsularis*: an East-Indian Quadricapsular Plant, with the Aspect of bastard Alkanet.

LINNÆUS, who could trace the true Characters under an unlike Outside, refers this to the *Borage*, and calls it, *Borago foliis ramificationum oppositis, calycinis foliolis sagittatis*: Borage with the Leaves in Pairs upon the Branches, and the Cup Leaves arrow-headed.

The Root is composed of numerous thick Fibres, connected to a small Head.

The Stalk is round, of a pale green, upright, and divided into many Branches.

The Leaves stand alternate on the main Stalk, and in Pairs upon the young Shoots. They are oblong, and of a fresh green.

The Flowers are minute, but the Cup Leaves extremely singular; they rise erect, they are of an arrow-headed Shape, and are stain'd delicately

with crimson.

The Flower is composed of a single Petal, the lower Part is tubular, and it is divided deeply into five Segments at the Edge. The Opening is stopped up by a Crown, composed of five obtuse and convergent Scales.

The Filaments are five, they converge also, and have oblong Buttons, which are fixed to their inside about the middle.

The Style is single, and there follow each Flower four naked Seeds.

The five Filaments and single Style refer the Plant to the *Pentandria Monogynia* of LINNÆUS.

Culture of this BORAGE.

It is a Native of the *East* and *West-Indies*; an Annual; and with us must be raised from Seed in a Pot of light Compost, set up to the Rim in a Bed of Tanner's Bark.

The Beginning of *March* is the best Time for sowing the Seeds.

The young Plants must be often watered; when they are three Inches high, they should be removed into separate small Pots; and when they have stood shaded in the same Bark-bed till well rooted, they must be removed into the Stove where they are to flower.

4. VIOLET CYCLAMEN.

Pl. 60. Every Gardener knows in what Rank to hold the Sowbreads, and all the botanical Writers have described them.

This has been distinguished by the Name *Cyclamen folio anguloso*, from the angulated Form of its Leaves; and *Scrobinum*, from its late Season of flowering. C. BAUHINE calls it, *Cyclamen Hederæ folio*; and our PARKINSON, *Cyclamen Hederæ foliis autumnale*: autumnal Sowbread with Leaves like Ivy.

LINNÆUS does not allow the supposed specific Distinction between this and the round leav'd Kind. He observes that there are so many Varieties with Leaves between round and angulated, in all Degrees and Forms, that there is no fixing the Boundary of the Distinction. He gives to all the *European* Kinds the Name *Cyclamen corolla retroflexa*: Cyclamen with the Flower

turned back.

The Root is very large, and black on the Outside, but white within; and is rounded, but depressed.

The Leaves are numerous and not inelegant; they are large, oblong, angulated in various Manners, and waved or indented at the Edge. Their Colour on the upper Side is a deep green, with some Blotches of white; on the under Part they are purple or crimson: they stand on long, thick, but not strong redish Footstalks.

The Flowers rise singly on long, naked Footstalks; they are large, of a very singular Form, and of a beautiful Violet Blue. Each has a rounded small Cup, divided into five little Segments.

The Flower is composed of one Petal. The tubular

Octob. tubular Part is rounded and swelled, and the Verge is composed of five large lanceolate Segments, with a prominent Neck. The Segments turn up.

The Filaments are five, and they stand in the Neck of the Flower.

Their Buttons are upright, acute, and convergent.

The Style is single, and longer than the Filaments, and the Fruit a round large Berry, which contains several angulated and somewhat oval Seeds.

The five Filaments and single Style refer the Plant to the *Pentandria Monogynia* of LINNÆUS, his fifth Class, and its first Section.

5. PURPLE CORTUSA.

Pl. 60. This, tho' with something of the Weed Aspect, Fig. 5. is a conspicuous and handsome Plant; and long since made its way into our Gardens; whence a worse Taste, preferring Novelty to Beauty, has now almost banished it.

The earlier Writers all mention it. MATHIOLUS calls it *Cortusa*, and most continue the Denomination, with the Addition of that Author's Name, *Cortusa Mathioli*. C. BAUHINE more distinctly calls it, *Sanicula montana, latifolia, laciniata*: broad-leav'd, lacinated, mountain Sanicle.

LINNÆUS preserves the *Mathiolan* Name *Cortusa*, and adds as the Distinction of this Species, *Calyculus corolla brevioribus*: *Cortusa*, with the Cups shorter than the Flower, there being a new discovered Siberian Kind, in which they are longer.

The Root is composed of innumerable dusky Fibres connected to a small Head.

The Leaves rise in a fine large Cluster, and are in their Form and Colouring very elegant.

Their Footstalks are long, and redish; they are broad, deeply jagged at the Edges, and of a fine green on the upper Side, but greyish underneath.

The Stalk is round, upright, and eight Inches high.

The Flowers crown its Summit in a very elegant Head; they are about ten in Number; and each having its long delicate Footstalk, they spread out, and droop downwards; they are large, of a delicate purple, and have a light Fragrance.

6. ORIENTAL OPHIORHIZA.

Pl. 60. The Singularity and celebrated Virtues of this Fig. 6. Plant, must give it a Place in the Collections of the Curious, for it can claim little Praise on the Account of Beauty.

The earlier Writers did not know it. KÆMPFER in his *Amenitates Exoticæ*, names it, under the *Indian* Term, *mungos radix*.

LINNÆUS first treated it botanically: he gave it the Name *Ophiorhiza*, established the Characters of a regular Genus, and added as the Distinction of this Species, *foliis lanceolato ovatis*: *Ophiorhiza*, with lanceolate but nearly oval Leaves. This distinguishes it from the Plant called *Nitra*, which is truly an *Ophiorhiza*, but has absolutely oval Leaves.

Culture of this CYCLAMEN.

Octob.

It is a Native of many of the northern Parts of Europe, and bears all Seasons in our open Borders. The true Method of propagating it is by Seed: this should be saved from the finest Flowers, and sowed on a Piece of Ground in the Nursery, open to the Morning Sun.

The Progress of the Plant to Perfection is very slow; but the Gardener who has Patience, will this Way obtain beautiful Flowers. The finest are to be preserved for the distinct Beds, the rest dispersed in less conspicuous Places; and once a Year they should be all taken up, and planted in new Mould.

Each Flower has a Cup form'd of one Leaf, cut at the Rim into five Segments.

The Body of the Flower is form'd of one Petal, tubular a little Way; and divided into five large and elegant Segments, with as many Tubercles at the Base.

The Filaments are five, and they are very short; and their Buttons of a singular Structure; they are composed of two Plates; and fixed to the Outside of the Filaments.

The Style is single; and the Fruit is an oval Capsule with many Seeds.

The five Filaments and single Style refer the Plant to the *Pentandria Monogynia* of LINNÆUS, his fifth Class, and its first Section.

Culture of this CORTUSA:

It is a Native of the northern Parts of Europe; and requires no shelter in our Gardens: it must be planted in an open Situation, and in the common Mould.

The Roots increase abundantly; and no Way is so ready as the parting them for increasing the Plant; nor is there any Advantage in raising it from Seed, for the Flower admits no Variation. There is this farther Disadvantage, that the Seeds ripen poorly with us. The Plants should be allowed a Foot Distance, and often watered.

The Root is extremely long, slender, and variously twisted. Its Bark is of a redish brown. The Pith white and hard. The Taste is bitter beyond all other known Substances, and the *Malayans* hence call it by a Name which signifies in their Language, the Gall of the Earth, as we do Gentian.

The Stalk is round, tender, jointed, tolerably upright, and fifteen Inches high. The Colour is a yellowish green, but the Joints are red.

The Leaves are placed in Pairs, and are large, broad, but lanceolated, undivided at the Edges, sharp pointed, and of a delicate green.

The Flowers are very minute, and their Colour is a faint red; they are placed in little Clusters

at

Octob. at the Tops of small Shoots, from the Bosoms of the Leaves.

Each Flower has its Cup formed of one Leaf, permanent, and cut at the Rim into five equal Segments.

The Flower is formed of one Petal, hollow, and cut at the Verge into five small expanded Segments. Five Filaments occupy the Centre; they are inserted into the Tube, and equal it in Length; and they have oblong Buttons.

The Style is single, longer than the Filaments, thickest in the upper Part, and there divided into two Heads. It rises from a double Rudiment, which ripens into a Capsule composed of two broad obtuse Lobes, which spread out, and split inwards.

The Seeds are numerous, and angulated.

The five Filaments and single Style refer the Plant to the *Pentandria Monogynia* of LINNÆUS,

his fifth Class, and its first Section.

Octob.

Culture of this OPHIORNIZA.

It is a Native of many Parts of the *East Indies*, and is there familiarly known, and in great Repute against Poisons. They have a fabulous Story, that its Virtues were discovered by the Creature, whence it is vulgarly named; *Mungos*, which, they say, eats it, when bit by a Viper.

We know how to laugh at these Tales; but we may understand by this that the Plant is so well known, that Seeds may be easily procured without Danger of Mistake; and they will shoot freely in a Pot of rich Mould in a Bark-bed: they should be transplanted at three Inches high into separate Pots; and after they are well rooted, and tolerably grown, they should be removed into the Stove to flower.

7. TRIFID CONVULVULUS.

Pl. 60.
Fig. 7.

This elegant Plant we owe to the Diligence of those who have visited the *American* Islands in the Pursuit of Science. Its Singularity and Beauty equally entitle it to a Place in our Gardens.

The earlier Writers could not know it: it is figured by Sir HANS SLOANE under the Name of *Convolvulus folio lanato tripartito*: LINNÆUS refers it also to the Convolvulus Kind; and adds as the Distinction of the Species, *foliis trilobis tomentosis, caule lanuginoso*: woolly Convolvulus, with trilobated Leaves.

The Root is long and white, and runs a great Way under the Surface.

The Stalk is round, weak, of a pale green, covered with a white downy Matter: when supported among Bulbes, it will rise to a very considerable Height.

The Leaves stand alternately, and remote; they have long Footstalks, whitish, and downy at the main Stem, and rising in an acute Angle.

The Leaves themselves are large, broad, divided almost to the Base into three Lobes, which are broad, sharp pointed, and undivided at the Edges. Their Colour is also a whitish green, and they are thick, covered with the same woolly Down.

The Flowers stand singly on long Footstalks, rising from the Bosoms of the Leaves; and they are large, and of a beautiful purple.

Each has its Cup formed of a single Leaf, cut into five Segments at the Edge.

The Flower is formed of one Petal, and is long, hollow, and undivided at the Rim.

The Filaments are five; they are short, and are crowned with flatted oval Buttons.

The Style is single, but crowned with two Heads; and the Fruit an oblong Capsule, with several large Seeds.

The five Filaments and single Style place this Plant among the *Pentandria Monogynia* of LINNÆUS, the fifth of his Classes, and its first Section.

Culture of this CONVULVULUS.

It is a Native of *Jamaica*, and other warm Parts of the *West Indies*, and loves a loose rich Soil. With us it must be raised from Seeds; and allowed the Heat of a Stove; but its Management is easy to those who have this Advantage, and it will make a very elegant Appearance among the other Plants when brought to flower.

The Seeds must be obtained from some of the Islands where it is native, and sown in *March* upon some of the light Composts, in a Pot. This must be set up to the Rim in a Bark-bed, and at Times gently watered.

When the young Plants appear they must be thinned, if they rise too close, and often refreshed with Water; but it must be given a little at a Time, and with the utmost Care; for if the Plants are too much wetted when so young, they never thrive well afterwards.

At three Inches high they must be transplanted into separate Pots. These must be set up to the Rim in the Bark-bed, as the others, and a Mat must be drawn over the Glasses to shade them till they are rooted. They must be allowed to take some farther Growth in this Place, and then removed into the Stove.

From Time to Time they must be transplanted into larger Pots, and they must have Air and Water as the other Kinds. They should have the Opportunity of climbing; and they will flower in great Profusion. They are remarkably handsome when in full Bloom, from the fine Contrast of the white Leaves and purple Flowers.



1
White Indian Heliotrope



2
Virginian Pulmonaria



3
Indian Borage



4
Violet Cyclamen



5
Purple Cortusa



6
Oriental Ophiorkiza



7
Trifid Convolvulus











A P P E N D I X

T O

E D E N :

C O N T A I N I N G

Figures, and a succinct History of Twenty new Species of Plants, first raised in *Europe*, in the Royal Gardens at *Kew*, at various Periods, since the Year 1757 ; when this Work was first published.

The Public will be pleased to accept their Figures, and this short History, from the Vegetable System, till more Acquaintance with their Nature and Condition afford the Opportunities of relating the whole Method of their Management, and Culture.

1. BROAD-LEAVED HEARTSEED.

SILPHIUM LATIFOLIUM.

Plate 61. The Leaves are broad, and hearted ; and have long Footstalks.

THIS is a Perennial, native of Carolina ; a very noble Plant of seven feet high, flowering in September. The Stalk is tinged with brown ; the Leaves are of a bright and fine green ; the Flowers are yellow.

2. CRIMSON FEVERFEW.

MATRICARIA GLASTIFOLIA.

Plate 62. The Leaves are simple, lanced, and undivided.

THIS is a Perennial, native of North America ; a very singular Plant of three feet high ; flowering in September. The Stalk is of a brownish green ; the Leaves are of a strong green ; the Flowers are of a beautiful purplish crimson, with a yellow disk.

3. DECUMBENT STONEWORT.

VERBESINA POPULIFOLIA.

Plate 63. The Stalk lies upon the ground ; the Leaves are oval, and curled.

THIS is an Annual, native of China ; a straggling

Plant, of a foot or two in length, flowering throughout the summer. The Stalk is pale ; the Leaves are of a yellowish green above, and paler below ; the Flowers are yellow.

4. WHITE-FLOWERED GOLDEN ROD.

SOLIDAGO ALBA.

The Leaves are oblong, and waved ; the Flowers grow all the way up the Branches. Plate 64.

THIS is a Perennial, native of New York ; a very singular Plant, of two feet high, flowering in September. The Stalks are olive-coloured ; the Leaves are of a coarse green ; the Flowers are white, with a yellow disk.

5. SMOOTH SAFFLOWER.

CARTHAMUS LÆVIS.

The Leaves are smooth ; the lower are oblong, serrated at the base, and embrace the Stalk ; the upper are sessile, heart-shaped, and dented all round. Plate 65.

THIS is a Perennial, native of Carolina ; a very beautiful Plant, of near two feet in height, flowering in September. The Stalk is ruddy ; the Leaves are of a fresh and full green ; the Flowers are of a most delicate crimson.

6. CRIMSON

6. CRIMSON MEADOWSWEET.

SPIRÆA RUBRA.

Plate 66. The Leaves are winged, and all the Leaflets cut into lanced lobes.

THIS is a Perennial, native of North America; a very beautiful and noble Plant of two feet and a half high; flowering in September. The Stalk is brownish; the Leaves are of a strong and good green; the Flowers are of the most elegant light crimson; the Damask Rose colour, but finer.

7. WAVY FAIRWORT.

AMARYLLIS UNDULATA.

Plate 67. The Petals are undulated.

THIS is a Perennial, native of the West Indies; a very singular and elegant little Plant, of a foot high, flowering in August. The Leaves are of a fresh and pleasing green; the Stalk also is green; and the Flowers are of a purplish crimson.

8. JAGGED TREE PRIMROSE.

OENOTHERA LACINIATA.

Plate 68. The Leaves are deeply jagged.

THIS is an Annual, native of Carolina; a singular and very pretty Plant, of a foot high, or

a little more; flowering in August and September. The Stalk is ruddy; the Leaves are of a dusky green; the Flowers are yellow.

9. PROSTRATE INDIGO.

INDIGOFERA DECUMBENS.

The Leaves are winged, and smooth; the Pods hang down. Plate 69.

THIS is an Annual, native of China; a very beautiful, though low Plant, flowering in August. The Stalk leans, and is a foot long: it is of a pale olive colour, with brown Films; the Leaves are of a fresh green; the Flowers are crimson.

10. CLAMMY GOATWORT.

CYTISUS VISCOSUS.

The Leaves are in threes, they are lanced, and all sessile; the Cups gape; the Pods hang obliquely. Plate 70.

THIS is a Perennial; a shrub of Portugal: it grows to ten feet high, and flowers in July. The Stem is brown; the Leaves are of a fresh green; the Flowers are yellow.

11. GLAUCOUS

*Spiraea rubra*



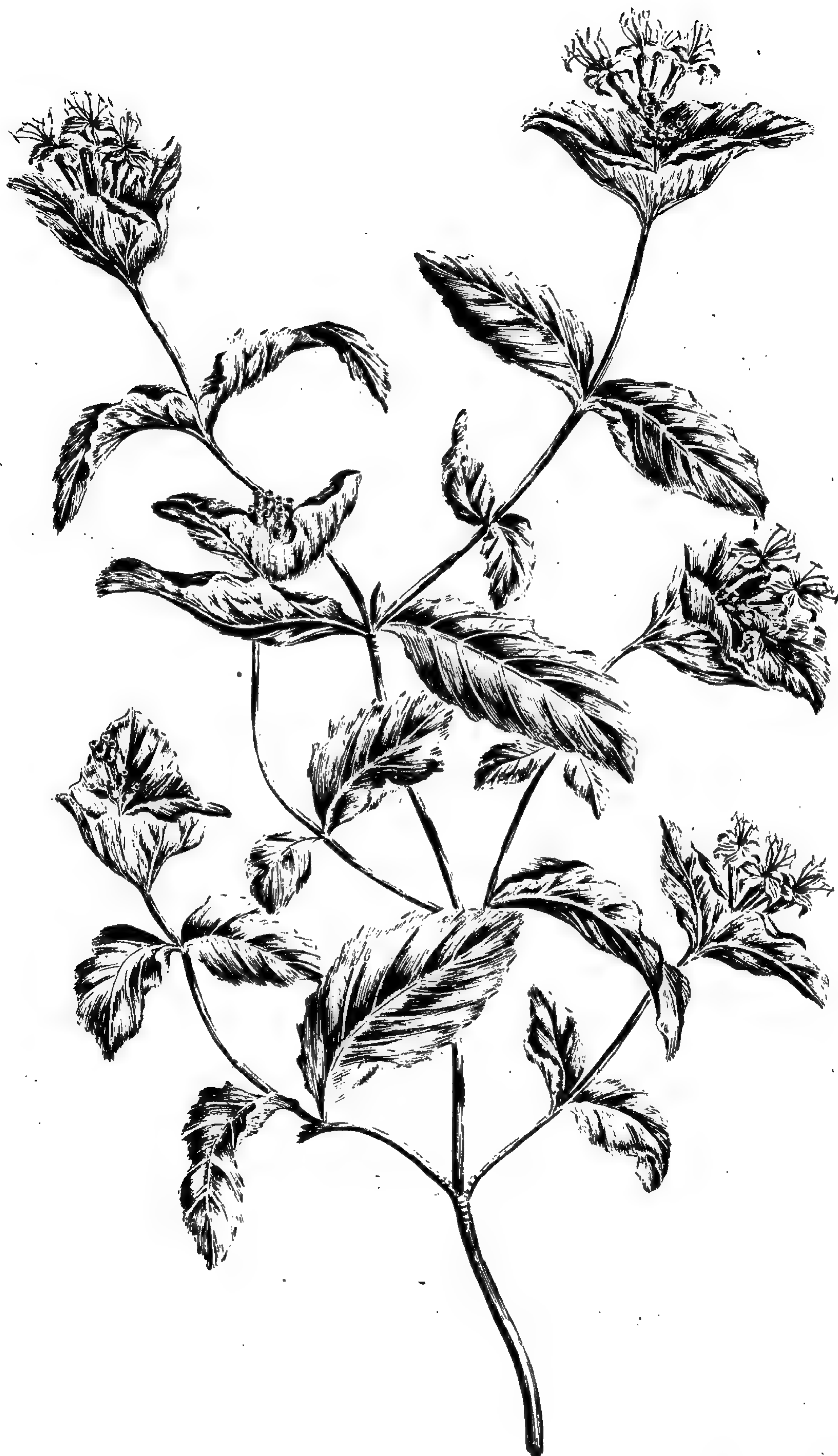
Amaryllis undulata



Indigofera decumbens







Lonicera glauca



Celastrus Crata



Genista striata



Trillium longifolium

*Ononis varius*

11. GLAUCOUS HONEYSUCKLE.

LONICERA GLAUCA.

Plate 71. The Leaves are broad lanced, and have distant unequal notches.

THIS is a Perennial woody Plant, native of North America: a very beautiful one, flowering through all the middle part of summer. It grows to four or five feet high. The Stalk is pale brown; the young Shoots are green; the Leaves are of a fresh green on the upper side, and blueish underneath; the Flowers are of a delicate, but not strong crimson, with some light intermixture of yellow.

12. OVAL SPONDELL.

CELASTRUS OVATA.

Plate 72. The Leaves are oval; and their Footstalks are eye-lashed.

THIS is a Shrub, native of the Bahama Islands: it grows to eight feet high, and flowers in August. The Stem is brown; the young Shoots pale green; the Leaves are of a fine fresh green, and have their Footstalks eye-lashed with red hairs; the Flowers are of a pale greenish yellow.

13. STREAKY BROOM.

GENISTA STRIATA.

Plate 73. The Leaves are obtuse; the Branches striated; the Pods downy.

THIS is a tall and branchy Bush, native of Por-

tugal: it grows to ten feet high, and flowers all winter. The Stem is whitish; the Leaves are of a pale greyish green; the Flowers bright yellow.

14. WAVY CROWN IMPERIAL.

FRITILLARIA LONGIFOLIA.

The Crown is short; the Leaves are lanced, Plate 74. very long, and undulated.

THIS is a Perennial, native of the Cape of Good Hope: a Plant of a foot high, flowering in January. The Stalk is pale; the Flowers are of a light green; the Leaves are of a very fine green.

15. EMBROIDERED BITTERTVETCH.

OROBUS VARIUS.

The Leaflets are linear; the Films are arrowed; the Flowers gape. Plate 75.

THIS is an Annual, native of Italy; a very beautiful Plant, of a foot and a half high, flowering in July. The Stalk is pale; the Leaves are of a greyish green; the Flowers are of three colours, red, yellow, and white; all beautifully streaked, as if wrought with a needle.

16. UNEVEN

16. UNEVEN VIOLET.

VIOLA OBLIQUA.

Plate 76. The Leaves are heart-shaped, uneven on the surface, and sharp dented.

THIS is a Perennial, native of North America; a Plant of five inches high, flowering in May. The Leaves are of a strong, but not bright green; the Stalks are pale; the Flowers are of a fine blueish purple.

17. CLAMBERING BUCKTHORN.

RHAMNUS SCANDENS.

Plate 77. The Leaves are oblong, waved, and thin; the clusters of Flowers have long Footstalks.

THIS is a Shrub of a weak Stem, but when supported will rise to twelve feet high: it is a native of Carolina, and flowers in July. The Stalk is of a faint green; the Leaves are of a fresh green on the upper side, and paler underneath; the Flowers are of a greenish yellow.

18. LANCED MEALWOOD.

VIBURNUM LANCEOLATUM.

Plate 78. The Leaves are lanced, and undivided, and smooth.

THIS is a branchy Shrub, of six feet high,

native of Virginia; it flowers in July. The Stem is brown; the young Shoots are of a dusky green; the Flowers are white.

19. THE CAROLINA ALOE.

ALOE CAROLINIANA.

The Flowers have Footstalks, with awly Films at their base. Plate 79.

THIS is a Perennial, native of Carolina; a Plant of three feet high, flowering in August. The Stalk is green, spotted with brown; the Leaves are of a fine fresh green; the Flowers are pale and greenish.

20. DOWNY CASQUEWEED.

SCUTELLARIA PILOSA.

The Leaves are hearted, nurlled, and obtuse; the Twigs are downy. Plate 80.

THIS is a Perennial, native of North America; a Plant of two feet high, flowering in July. The Stalk is brown; the Leaves are of a dull dead green; the Flowers are crimson; and the Seed-vessels of a dusky reddish hue.



Viola Obliqua



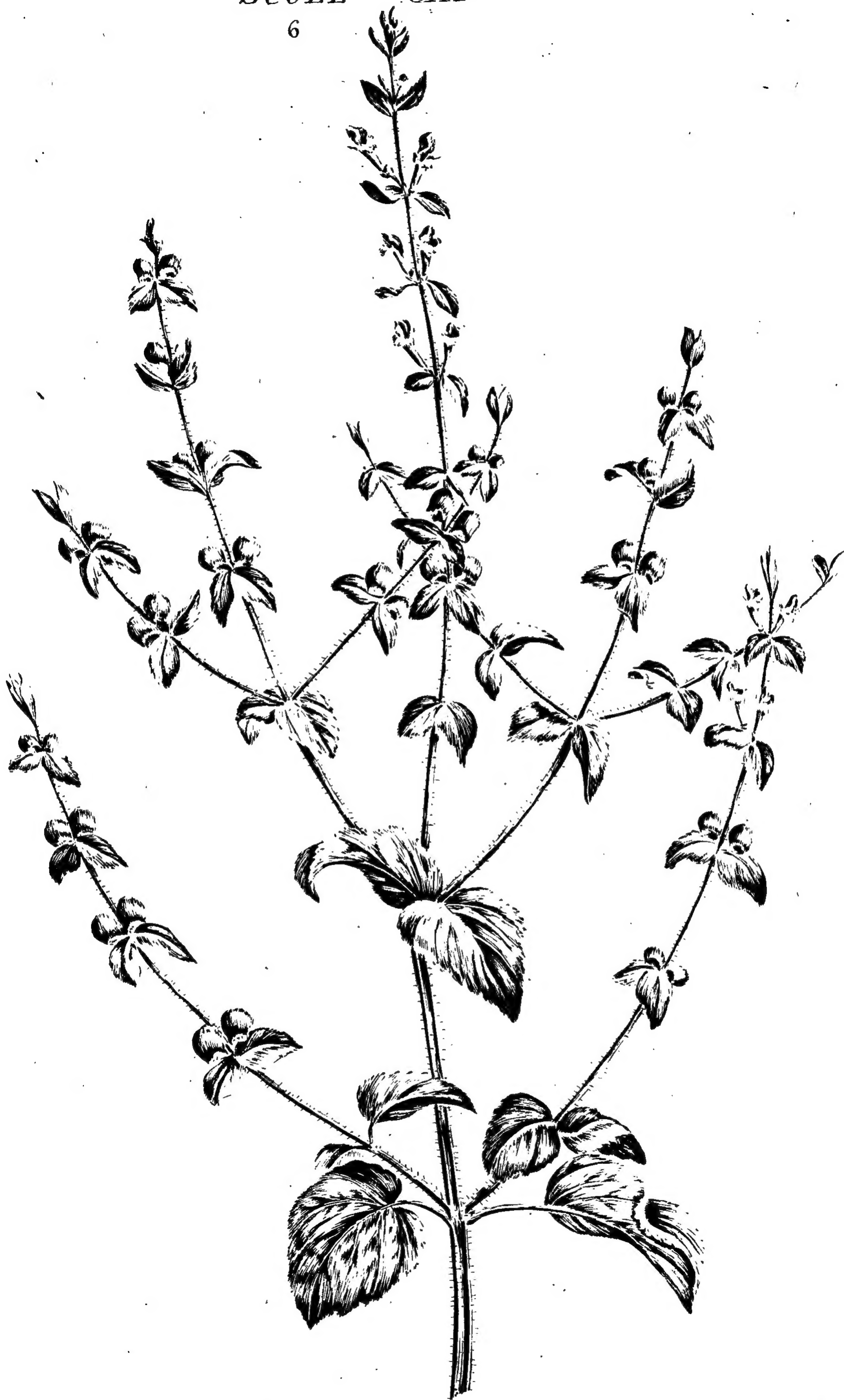
Rhamnus scandens



Viburnum lanceolatum



Olee Caroliniana



Hairy Scull cap

Scutellaria pilosa

I N D E X.

A

A Cadian Lilly, 376.
 Acanthus, 37.
 Achillea, 663.
 Aconite, 605.
 Anonis, 339.
 Adonis, 253, 484.
 Agricola's, Methods of multiplying Trees, 680.
 Aloe, 98, 121, 137, 176, 187, 246, 295.
 Amaryllis, 17, 126, 182, 206, 423, 519, 520, 521, 689.
 Anemone, 303, 385, 387, 425, 433, 440, 512.
 Antholyza, 54.
 Apocynum, 342.
 APRIL; Week first, 356.
 ————— second, 368.
 ————— third, 380.
 ————— fourth, 380.
 Arbutus, 172.
 Aristotis, 234.
 Arum, 375.
 Asclepias, 175, 267, 607.
 Asphodel, 389, 541.
 AUGUST; Week first, 548.
 ————— second, 560.
 ————— third, 572.
 ————— fourth, 12.
 Avicennia, 632.
 Auricula, 356.
 Aster, 109, 338, 379, 649.
 Astragalus, 554.

B

Bee-flower, 570.
 Betony, 555.
 Beureria, 601.
 Bignonia, 377.
 Bindweed, 30.
 Bindweed Velv. 87.
 Bixa, 31.
 Bizantine Lilly, 573.
 Borage Indian, 710.
 Borbonia, 217.
 Bramble double, 545.
 Broom Canary, 236.
 Broom lanceolate, 607.

C

Cactus, 199.
 Calendula, 150.
 Calla, 76.
 Callicarpa, 631.
 Campanula, 97, 136.
 Campion, double, 674.
 Canna, 3.
 Canna, dotted, 573.
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 Ceanothus, 133.
 Centaurea, 661.
 Cheiranthus, 567.
 Cherry, 325.
 Chrysanthemum, 149.
 Cistus, 16.
 Clematis, 553.
 Clitoria, 53.
 Codaga, 10.
 Colchicum, 209.
 Columbine, 459, 497.
 Convolvulus trifid, 712.
 Cordia, 640.
 Cornflower, 665.
 Cornell, 260.
 Coronilla, 581.
 Cortufa, 711.
 Cotton, 26.
 Cotyledon, 666.
 Cowslip, 351.
 Cassula, 242.
 Cinnam, 75.
 Crocus, 256, 269, 952.

Crowfoot, 193, 391, 470, 473.
 Crown Imperial, 511.
 Cudweed, golden, 615.
 Cyclamen, 181, 243.
 Cyclamen, h. f. 710.
 Cynomorion, 197.
 Cythus, 313, 318.

D

Daffodil; see Narcissus.
 Daily, 211.
 Datura, 291.
 DECEMBER; Week first, 176.
 ————— second, 183.
 ————— third, 200.
 ————— fourth, 200.
 Doronicum, 476.
 Dracocephalum, 23, 340.
 Drosera, 294.

E

Egg Nightshade, 27.
 Erythrina, 88.
 Erythronium, 368.
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F

FEBRUARY; Week first, 260.
 ————— second, 272.
 ————— third, 284.
 ————— fourth, 296.

Forcing Frame, 659.
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 Foxglove, golden, 85.
 Foxglove, ferruginous, 701.
 Fritillaries, 409, 428, 452.

G

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 Gloriosa, 28.
 Gomphrena, 61.
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H

Hæmanthus, 50.
 Hawkweed, 569.
 Hebenstretia, 113, 616.
 Helianthus, 531.
 Heliotrope, 340.
 Heliotrope, Indian, 709.
 Hellebore, 366.
 Hellebore, white, 678.
 Hemerocallis, 567, 673.
 Hepatica, 270.
 Hermannia, 222.
 Hesperis, 697.
 Hibiscus, 5, 18, 41, 63.
 Hollyhock, 652.
 Hop Hornbeam, 593.
 Horehound, 700.
 Houseleek Tree, 261.
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 Hyacinth, 213, 246, 268, 327, 392, 422, 484, 642.

I

Jacobæan Lilly, 206.
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 ————— second, 224.
 ————— third, 236.
 ————— fourth, 248.
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 ————— third, 524.
 ————— fourth, 536.
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 ————— second, 452.
 ————— third, 452.
 ————— fourth, 464.
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L

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 Lilly, perlian, 424.
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M

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 ————— second, 320.
 ————— third, 332.
 ————— fourth, 344.
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 Martagon, 497.
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 ————— third, 416.
 ————— fourth, 428.
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N

Narcissus, 184, 304, 329, 332, 354, 438, 464, 495, 517.
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 ————— second, 128.
 ————— third, 140.
 ————— fourth, 152.
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 Nyctanthes, 185, 187.

O

OCTOBER; Week the first, 68.
 ————— second, 80.
 ————— third, 92.
 ————— fourth, 104.

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 Othonna, 220.
 Othonna, 640.
 Othonna, 196.
 Othonna, 281.
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P

Pancratium, 49, 111, 170, 200, 677.
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 Pentapetes, 89.
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 Polygala, 164.
 Pomegranate, 19.
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 Psidium, 309.
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Pulsatilla, 258.
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R

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S

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 third, 44.
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T

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 Tanzy, sampe-leav'd, 115.
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 Tragacanth, 595.
 Trefoil, Shrub, 103.
 Trefoil, yellowish, 614.
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U

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 Verbefnia, 235.
 Veronica, 558.
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W

Willowherb, 493.
 Wolfsbane Winter, 208.

X

Xeranthanum, 613.

* * The Products of the Kitchen and Fruit Garden are contained under their proper Heads, in the several Weeks of each Month, referred to in this Index.

N. B. The Publick are to be informed, that since our Publication of the Virtues ascribed to Deadly Nightshade, many Trials have been made, but few have succeeded: it has no specifick Virtue against Cancers, and its Use may be hurtful.

F I N I S.

